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Gleanings in Bee Culture

ESTABLISHED 1873

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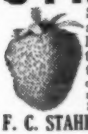

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The Monthly Honey Market

Market News Service, United States Department of Agriculture, Bureau of Agricultural Economics, Semi-monthly Report. Information from Producing Areas (first half of December. Prices generally refer to sales by beekeepers or beekeepers' organizations, f. o. b. shipping points.)

Southern California—Rainfall during the past two or three days of this period has been substantial to heavy over most of the state and in the Los Angeles area has brought rainfall for the season up to the highest figure in 45 years. As a result of the good rains honey plants are rapidly becoming normal, and some report that sages and other mountain honey plants should be in the best condition since 1926 if normal rains continue. Bees are working lightly now on mustard, eucalyptus and lemons. Brood-rearing is at a standstill but bees with stores are in fair shape. Many colonies, even though fed are weak, and beekeepers are questioning whether they will build up satisfactorily at the beginning of the coming season. Bees are now being moved back from Inyo County and other outlying places to sage and orange locations. Orange trees are said to be in normal condition. The market has generally held steady, but trading was lighter than for several weeks past, due partly to anticipation of a good crop next year based on the rainfall to date. Beekeepers, however, generally hold their prices firmly. Export demand continues slow, with practically all business confined to comb honey. Sales by beekeepers, per lb., reported as follows, in ton lots or more: Orange, extra white to water white, 6¼-6½c; some held higher; white, 5¾-6c; few, 6¼-7c; amber buckwheat, 6½c; mixed flowers, light amber to extra light amber, 5⅛-5½c; mostly around 5½c; Imperial Valley light amber to extra light amber alfalfa, mostly around $6.50 per case of 120 pounds; some held high as $7.00 per case. Small pails white orange have sold at 7½c per lb. Beesswax has been in good demand, with beekeepers generally offered 18-19c, mostly 18½c per lb. for good quality yellow wax delivered Los Angeles.

Central California.—The weather has been unsettled, with rain at the close. Frost put an end to the harvest of crops in some areas. Recent rains have benefitted vegetation. Manzanita is in full bloom in some parts of the section, and bees are also working on eucalyptus. The size of the clusters is reported below normal. Bees are consuming stores rapidly, and where they have been neglected many colonies have already perished. Sales by beekeepers reported, San Joaquin Valley light amber to extra light amber alfalfa, 5-5½c; mostly, 5¼c; alfalfa-cotton, light amber to extra light amber, 5-5½c; some, 5¾c; extra light amber to white lima bean, 5¾-6c. Beeswax is firm, with offerings light and few sales reported at 17½-18½c per lb. at country point.

Northern California—Heavy frosts with ice have been reported, and no honey plant blossoms are available for bees to work on. Precipitation at the close of the period was helpful as rainfall up to that time had been below normal for the season. Little honey remains to be sold. Few sales reported in ton lots or more, per lb. Light amber to extra light amber thistle, 5½-6c; light amber mixed flowers, 5¼-5½c; clover, extra light amber to white, 6c. Beeswax holds firm at 17½-18½c per lb. in the country, with few sales reported.

Pacific Northwest: West of Cascades: Rain has fallen on several occasions during this period, which is normal for this season of the year. Bees are quiet, with an ample supply of young bees, and stores are generally moderate. Temperatures were somewhat colder toward the close of the period. In some areas pussy willows are already in bloom, but bees are not able to work on them. Ton lots of mixed vetch and clover reported sold at 5-6c per lb.; small pails, large lots, 7.4-7.7 per lb. East of Cascades—In the Yakima Valley temperatures have recently been low following previous mild weather. Some rain has fallen and bees have generally been confined to their hives. The snow in the mountains already insures moisture for early flowers and irrigation water for next year. The crop, which yielded about one-third more than that of last year, has been about half sold. Sales are reported good, with a slight upward tendency in price. Extracted has moved in small pails at 7¾-8½c per lb.; 60s, 8½c per lb. Beeswax, average yellow, 19c per lb.

Intermountain Region—Carlot inquiries have fallen off but this is normal for December and it is reported that fully 75 per cent of the honey crop has already been sold. Demand is said to be principally for white to water white, with less demand for light amber. Many beekeepers are completely sold out. It is reported that some stores are buying molasses in preference to honey because of the difference in price and also because of the scarcity of available honey. Comb honey is largely cleaned up. Some carlots are being held in the hope of an advance in price later in the winter. Sales reported, per lb., white to water white, extracted, several carlots, 5c; smaller lots, 5½-7c; 60s, 7c; few up to 8½c; small pails, 7-7½c; few up to 9c; light amber to extra light amber, large lots, 5-5½c; light amber, small pails, 7½-8c; 60s or more, 6-7c per lb. Few sales of No. 1 white comb, $2.85-3.00 per case. Considerable beeswax has been sold at 16-18c per lb.

Arizona—Rain at the close of the period was badly needed to start early honey plants. Bees worked quite late on cotton, fall asters and other fall flowers, but scale colonies continue to lose weight steadily. Demand for honey continues good, with little remaining in beekeepers' hands. Sales reported, light amber to extra light amber alfalfa, $6.25-6.50 per case of 120 lbs.; some held higher; white to extra white mesquite, $6.50-7.00; mostly $7.00 per case of 120 lbs.; dark bakers' honey, ton lots, 5¼c per lb.

Southwestern States—South central and southwestern Texas—Little honey remains unsold. The weather has been warm enough for bees to fly, but winter stores are adequate in commercial apiaries. Many small beekeepers are giving little care to their colonies. Sales reported, extracted 60s, 6½-8c; small pails, 7-9c per lb. Dealers are offering 18c per lb. cash, 20c in trade for beeswax. West Texas—Honey plants are suffering from lack of rainfall. Many bees will need feeding in the spring if winter moisture is not sufficient to bring on early wild flowers. Extracted has sold in 60s or more at 6-10c per lb. Light-colored beeswax, 15c per lb. Oklahoma—In many parts of the state bees have secured enough nectar to winter on since the fall rains. The weather remained mild later than usual, allowing the plants to continue blooming and giving the bees a chance to work.

Plains Area—Red River Valley of Minnesota and North Dakota: Temperatures here have been far below normal, and the ground is well covered with snow. Sales reported, white to light amber comb, fancy, $3.00 per case; No. 1, $2.75; No. 2, $2.20 per case. South Dakota—Commercial bees are all in the cellar or packed outdoors. Most colonies went into the cellar light in weight. The recent extreme cold weath-

er has caused many weak colonies to die, when it became too cold for the clusters to move to new honey. Honey is moving very slowly, but little remains in beekeepers' hands except in the Black Hills. Sales reported, white sweet clover, small pails, 8-10½c per lb.; No. 1 white comb, $3.50-4.50 per case. Iowa—The weather has been cold, and snow fall has been heavy, with more than 18 inches on the ground in some parts of the state. This follows a precipitation in November, 321 per cent of normal. Bees in cellars are in good shape, but bees packed outdoors have not been able to fly for htree weeks. Inquiry for honey has been slow to good with different beekeepers but little honey now remains unsold. Few sales of white extracted in 60s reported at 7c per lb.; dark baking honey, 6c per lb. Average yellow beeswax, 20c per lb. Kansas and Nebraska—Precipitation during November was 150 per cent of normal in Nebraska and 205 per cent in Kansas, which was the wettest November for years in that state. Snow and some rain have fallen during the first two weeks in December, and prospects are better for next year's honey plants. Temperatures have ranged from considerably below zero to high enough for bees with southern entrances to fly a little. Stocks of honey are becoming light, especially comb honey, and the market is fully firm. Few sales reported, white extracted 60s, 7½-8c per lb.; small pails, 8½c; light

(Continued on page 60.)

Monthly Report of Honey Producers

Early in December we sent the following questions to honey producers: 1. What per cent of the honey produced in your locality has already left the hands of the producers? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid? 6. How does the number of colonies being wintered in your locality compare with that of last year? Give answer in per cent. 7. What is your estimate of prospects for a normal honey crop in 1934, considering the present condition of the bees and the honey plants? Give answer in per cent of average crop for your locality. The answers returned are tabulated as follows:

State. Name.	Pct. sold.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	To retailers. Ex.	To retailers. Comb.	Move-ment.	Estim. Colo. 1935 wint.	Estim. 1935 crop.
Ala. (J. M. Cutts)	..	..	..	..	..	.65	..	Fair	108	100
B. C. (A. W. Finlay)	..	.10	..	.65	..	.80	..	Rapid	105	100
Calif. (L. L. Andrews)	80	.06¼	..	..	..	.62	.15	Fair	75	75
Colo. (O. E. Adcock)	90	.06	..	.40	2.85	.50	.15	Fair	100	80
Conn. (A. W. Yates)	50	..	..	.70	4.50	1.00	.30	Slow	75	100
Fla. (C. C. Cook)	..	..	..	.38	..	.49	..	Fair	90	50
Fla. (Harry Hewitt)	98	..	..	.40	..	.55	..	Fair	100	50
Ga. (J. J. Wilder)	90	.06	..	.50	..	.60	..	Rapid	110	100
Idaho. (Ryon R. Isbell)	85	.05½	2.40	.42	3.00	.49	.17	Fair	120	110
Ind. (Jay Smith)	75	..	..	.50	3.00	.60	.15	Fair	90	100
Ind. (T. C. Johnson)	..	..	..	.50	3.60	.60	.20	Fair	100	100
Ind. (E. S. Miller)	20	..	..	.60	3.60	.75	.20	Slow	90	95
Iowa. (E. G. Brown)	100	.05½	..	.50	..	.65	..	Fair	105	80
Iowa. (F. Coverdale)	..	..	..	..	..	..	.15	Fair	90	90
Kans. (J. F. Garner)	..	..	..	.55	3.60	.65	.20	Fa'r	100	100
La. (E. C. Davis)	80	.05¾	..	.40	..	.55	..	Fa'r	100	100
Me. (O. B. Griffin)	60	..	..	..	5.00	..	.30	Fair	90	90
Md. (S. G. Crocker, Jr.)	75	..	..	.60	3.50	.75	.25	Slow	100	80
Mich. (I. D. Bartlett)	60	..	..	.50	3.50	.60	.20	Fair	100	90
Mich. (Floyd Markham)	50	.07½	..	.55	..	.70	.19	Slow	100	50
Mich. (E. D. Townsend)	70	.08	..	..	..	..	..	Fair	90	60
Minn. (B. L. Morehouse)	50	..	..	.45	4.32	.60	.23	Rapid	75	60
Nebr. (J. H. Wagner)	..	..	..	..	..	.70	.20	Fair	90	80
Nev. (Geo. G. Schweis)	..	.05	2.50	.38	2.87	..	..	Rapid	100	100
Nev. (Mrs. E. G. Norton)	100	.05	..	..	..	..	..	Fair	90	80
N. Y. (Adams & Myers)	..	..	..	.50	3.60	.75	.20	Fair	75	..
N. Y. (F. W. Lesser)	..	.07	3.25	.48	3.60	.60	.18	Fair	90	100
N. C. (W. J. Martin)	90	.05¼	..	.65	..	.85	.20	Fa'r	100	100
N. C. (C. L. Sams)	80	..	..	.50	3.00	.75	.20	Fair	100	100
N. D. (M. W. Cousineau)	90	.07	..	..	..	.59	..	Good	90	..
Ohio. (F. Leininger)	..	.06¾	..	..	..	..	..	Fair	100	85
Ohio. (J. F. Moore)	25	.07	..	.50	3.00	.65	.18	Slow	80	75
Ohio. (R. D. Hiatt)	35	.06¾	..	.55	3.50	.70	.18	Fair	100	90
Okla. (C. F. Stiles)	..	..	..	.55	..	.68	.18	Fair	90	80
Ore. (H. A. Scullen)	35	..	..	.37	..	.50	..	Slow	100	100
Pa. (Harry Beaver)	93	..	..	.50	3.25	.60	.17	Fair	100	..
Pa. (D. C. Gilham)	25	..	..	.75	4.00	1.00	.25	Fair	100	..
Pa. (H. B. Kirk)	..	..	..	.70	3.38	.90	.23	Slow	75	90
S. C. (E. S. Prevost)	95	..	..	.12½	..	.15	..	Slow	90	90
Texas. (T. A. Bowden)	90	..	..	.45	..	.60	..	Fair	80	50
Texas. (J. N. Mayes)	100	.06	4.50	.40	4.50	.40	..	Rapid	100	100
Texas. (H. B. Parks)	..	..	..	.35	..	.45	..	Fair	94	100
Utah. (Ray N. Miller)	80	.05¼	..	.40	..	.50	..	Fair	80	80
Vt. (Phillip Crane)	10	..	..	..	..	..	..	Fair	60	75
Va. (T. C. Asher)	..	..	..	.50	3.00	.60	.15	Fair	100	90
Wash. (W. L. Cox)	23	.05½	..	.46	..	.55	..	Rapid	120	95
Wash. (G. W. B. Saxton)	20	..	..	.42	..	.49	..	Fair	100	100
Wis. (N. E. France)	80	..	..	..	..	.45	.18	Slow	90	100
Wis.(E. H. Hanselman)	90	..	..	.45	3.00	.55	.15	Fair	50	50
Wyo. (Earl C. Reed)	90	.06	..	.50	..	.58	..	Fair	75	75

1935

A Happy New Year!

To Beekeepers and Everybody Engaged in Some Phase of the Beekeeping Industry

Do you know what AMERICAN HONEY INSTITUTE is?

Do you know what National Honey Week is?

Do you know what the Institute Service to
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Do you know about the Institute's Cookery Contest?

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Package Bees

for 1935

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Vol. 63
No. 1

Gleanings in Bee Culture

January
1935

North Dakota Beekeepers Optimistic

J. A. MUNRO

Sweet Clover Means to Beekeepers What Raw Material Means to Any Industry

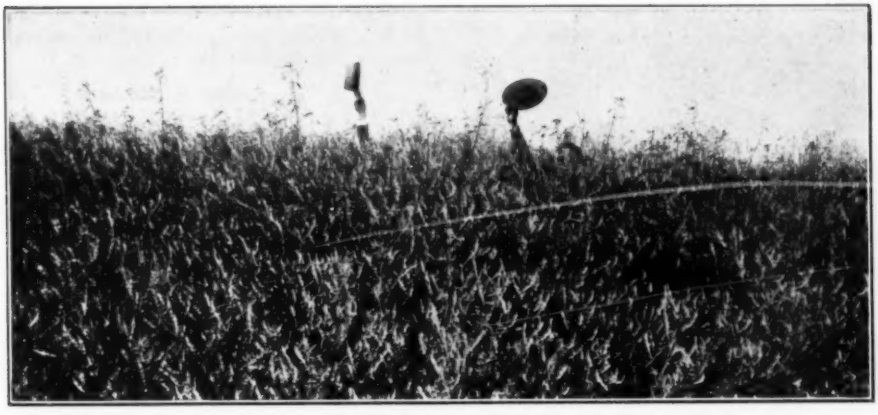
Rain or shine, wet years or drouth-stricken years, sweet clover has proven to be one of the most dependable plants in this part of the country. To the farmer who appreciates good pasture for his livestock the plant is of inestimable value. To the honey producer there is nothing that can take its place in this region.

It is one of the few plants that the recent widespread drouth, of unprecedented severity, was unable to subdue. When other plants failed and grassy pastures, ordinarily green, had turned brown because of the prolonged dry weather, one of the most cheering sights was to see vigorous stands of sweet clover, in bloom, flanking roadsides and monopolizing fields almost anywhere one might travel over a large area of the state.

The only places where the plants could not succeed was where extremely hot and dry weather destroyed the young seedlings before they attained sufficient root development to tap the moisture of the subsoil. This situation was particularly true of the southeastern part of North Dakota, where there has been a marked reduction of sweet clover acreage during the past year or two. In general, sweet clover has held its own in other parts of the state.

Sweet Clover Survives Drouth

Its ability to survive drouth, grasshoppers and possibly other unfavorable con-



A sweet clover scene in the Red River Valley of North Dakota.

ditions has caused more than passing comment. Carroll P. Streeter, prominent agricultural writer, says of this plant in a recently appearing article, as follows: "You don't have to talk with many farmers to discover that sweet clover is making more friends for itself this year than in any recent period, and no wonder," he adds, "for the farmers with the most pasture are the farmers with sweet clover."

The present widespread adoption of sweet clover by farmers of the state is due in no small part to the work of Drs. H. L. Walster and J. H. Shepperd of the North Dakota Agricultural College, who have disseminated first hand information relative to sweet clover culture and its value as a soil modifier and pasture and fodder plant.

Both beekeeping and sweet clover growing, although represented generally over the state, are most extensively developed in the eastern section. Here, especially in several of the Red River Valley counties more than five per cent of the total land under cultivation is in sweet clover and most of the commercial beekeepers are located here.

Sweet clover means to beekeeping what the raw material means to any industry. North Dakota does not lack in this respect. In 1920 there were 708 hives of bees and about 10,000 acres of sweet clover in the state. Now there are about 32,000 hives of bees and upwards of 500,000 acres of sweet clover. Analyzing these figures we find that although the number of bee hives and the number of acres of sweet clover have increased close to fifty fold since 1920, yet the ratio of the two have remained fairly constant over the period. Based on the above, the 1920 ratio was one hive of bees to fourteen acres of sweet clover, while at present the ratio is one hive of bees to fifteen acres of sweet clover.

Proper Distribution of Colonies Essential

Since sweet clover is the main nectar-producing plant we think of it in terms of bee pasturage. When it is considered that one acre of sweet clover bloom will supply a colony's need through the main nectar flow, it will be seen from the above that there is no lack of bee pasturage. However, it is not unusual to hear of some locality in the state getting overstocked with bees, with the result that honey production per colony is materially reduced. The usual remedy for the situation is proper distribution of the colonies. In this connection it should be borne in mind that severe drouth aggravates the problem. Almost any locality may support a certain number of colonies during a series of normal years but when drouth, or some other factor which affects the yielding ability of the plants occurs the result will be the same as overstocking.

Proper distribution of colonies, in some instances, causes a great deal of inconvenience. Occasionally it means for the commercial beekeeper a long haul of hives and other equipment, by auto truck, to an area of more abundant bee pasture. This, of course, relieves the situation for the remaining beekeepers in the area vacated but results in opening up new territory for commercial beekeeping. Adequate protection from prevailing winds and a fair supply of pasture are the prime requisites of a beekeeping location. These conditions should extend throughout the season in so far as possible. In general, shelter belts of trees render the best protection from wind. Wooded locations, which border practically every stream, river and lake are especially desirable, because of the shelter they afford and the additional value of being adjacent to a dependable water supply. Spring pasture for bees is usually abundant. However, the value of this pasture, to beekeeping, is largely dependent on the prevailing weather. If the weather is fine, and colonies are in fair condition, it is not unusual to secure a surplus yield of honey from dandelion, fruit bloom and other early sources. Usually the nectar and pollen from these early sources are used only for brood-rearing and the building up of the colonies for the main flow from sweet clover which begins during the latter part of June.

A Trip Among Beekeepers

During the past fall the writer, accompanied by Prof. O. A. Stevens, botanist of the North Dakota Agricultural College, made a trip by auto over a large portion of the state and observed conditions along the way. The trip was made in September —a time of the year when the only plants in bloom are those which normally bloom in the fall or plants which have the ability to bloom over a longer period. Naturally for the latter group sweet clover predominated. Its period of bloom extends from about the middle of June to the middle of September and some years it re-

mains in bloom considerably later in the fall. Patches of the bloom, both yellow and white, were commonly seen along the roadsides from Fargo northwards throughout the Red River Valley and westwards over the northern part of the state.

Fields of sweet clover, pastured by cattle or clipped earlier in the season, show-

Colonies prepared for winter in the apiary of W. A. McDonnell, Devils Lake, Ramsey County, North Dakota.

ed an abundance of bloom at the time. As we proceeded westwards we noticed a marked reduction in the acreage of the plants. However, in talking to beekeepers along the way, it was apparent that there was no lack of pasture for their bees.

Mr. W. A. McDonnell, a Ramsey County beekeeper, told me that his average this season was smaller than usual, being 71 pounds of honey per hive, most of which

C. F. Easton's apiary in Tower City, N. D. Hives covered with straw and held in place with a wire fence.

is produced as comb honey for his local market. Incidentally, he mentioned that he winters his colonies out of doors with practically no loss, in two-story hives packed with dry leaves and straw and further protected with a wrapping of tough building paper (sisal craft paper). Each hive is provided with a top entrance only during the wintering period.

At Minot, which is about as far west as we went on the trip, we had a talk with Mr. and Mrs. R. W. Kann, who, similar to other beekeepers in the Minot vicinity, have kept bees as a sideline for years. Their hive average was 120 pounds of honey this year. Commenting on their experience they said that honey was their best crop this season, as drouth had practically ruined other crops. They expressed the opinion that for the time required and the amount of capital involved that no other branch of farming paid its way any better than beekeeping. The Kanns

Colonies prepared for outdoor wintering at the North Dakota Experiment Station apiary. The hives are covered with celotex and further protected with tar-paper caps. Ninety per cent of the colonies survived the past winter with this protection.

winter their colonies in a cellar under their house.

To what extent beekeeping may be developed along the Missouri River in North Dakota is none too well known. For years it thrived in the Williston vicinity, near the western border, but American foulbrood became established and destroyed most of the colonies before the disease was brought under control.

At Garrison, which is along the Missouri in west central North Dakota, Mr.

View of Cass County bee house.

George Gregg has well demonstrated what bees can do. His hive yields have been consistently high over many years, and

A group in atendance at the annual meeting of the State Beekeepers' Association and Winter Short Course in Beekeeping held at the North Dakota Agricultural College.

sweet clover which grows along the Missouri bottom lands is the main nectar source for his colonies. He said that his apiary of about 70 colonies would average better than 160 pounds of honey per hive this season. He winters his hives in a cellar underneath his house.

Disease Causes Some Concern

At Bismarck and Mandan, points which are further south on the Missouri than the other places mentioned, beekeeping has flourished for a number of years. Quite a few beekeepers are in the vicinity and are doing well with their bees. Here beekeeping got its first setback three years ago when American foulbrood became established in an apiary. Prompt measures taken by the bee inspection service of the State Department of Agriculture succeeded in stamping it out. Subsequent inspections have failed to reveal any further development or spread of bee disease in this area.

Of the various problems facing the bee industry of the state, probably bee disease has caused more real concern among beekeepers than anything else. Fortunately for the welfare of our beekeeping, bee laws for the safe-guarding of the industry were drawn up at an early date and funds have been provided for bee inspection. At present the funds are inadequate, being only sufficient to take care of emergency work, but it is hoped that this situation will soon be remedied. Adequate protection of the bee industry requires the reinspection of areas previously found diseased, the destruction of diseased material, and the extension of inspection work into new beekeeping territory.

Marketing Problem Not Solved

The marketing of honey, although not as serious a problem as it was a few years ago, is still far from being solved. Problems of beekeeping management are many but one by one are becoming better understood. The North Dakota Agricultural College and the State Beekeepers' Association have taken a most active part in assisting beekeepers of this region. Joint meetings of the beekeepers' association and winter short course in beekeeping have been held annually at the North Dakota Agricultural College at Fargo. Here the beekeepers have met, with interests in common, to hear their problems discussed by leaders in the field.

The severe drouth of the past has had a depressing effect on beekeeping in this area. It is doubtful if the state average for 1934 will exceed 75 pounds per colony, whereas, for the preceding decade of years the average for the period is about 125 pounds of honey per hive. Fortunately, however, periods of drouth are infrequent and seldom extend over more than two or three years at a stretch. If climatic history repeats itself, years of adequate rainfall should again soon occur.

Fargo, North Dakota.

Gentleness and Industry

ERWIN C. ALFONSUS

With Gentle and Industrious Bees, Beekeeping Becomes More Pleasurable and Profitable

In the June issue of Gleanings, the editor refers to the fact that cross bees occasionally cause disturbance among neighbors and recommends the development of gentle and industrious strains. I can heartily support this recommendation, for it is a pleasure to have bees that can be handled easily with a minimum of smoke and without a veil, which in hot weather becomes a torture. "Hot" bees really should become a thing of the past.

The development of a gentle and industrious strain of bees is not a very difficult task and it is possible within a few seasons to change entirely the characteristics of a beeyard. Regardless of the race of bees, there is always a variation noticeable with respect to gentleness and production. In one colony the bees will attack furiously, run off the comb, and frequently run out through the entrance. In order to find the queen, a queen excluder or drone trap has to be used. What difference does it make if such a colony produces a high yield, if it can be obtained only by suffering numerous, painful stings and by loss of much valuable time? Time is money, but so is honey. Honey can be produced more pleasantly and easily.

Mark Gentle Colonies Early in Season

The first manipulations in spring at temperatures which barely permit handling bees, usually give a true judgment as to the temper of a bee colony, provided the colony is fairly strong. Weak colonies are, as a rule, timid. Timidity may be mistaken for gentleness. Strong colonies of gentle behavior during handling in cool spring weather should be marked, so they can be easily recognized later on in the season. From these the best producers should be selected. The experiment station men are interested in many traits such as tongue length, capacity of honey sac, longevity of worker bees, egg-laying capacity of the queens, hardiness, etc. The average beekeeper, however, is not so much concerned with these traits, important as they may be, as he is with gentleness and industry in bees.

Before the season comes to an end the best producing colony will be known to the beekeeper. Preferably, this should be a colony which refrained from swarming without the application of the usual means of swarm control. Without hesitation queens should be reared and the entire apiary should be requeened with offspring of the queen chosen for breeding purposes. There are several books available dealing with queen rearing.

Queen Mating Hives Unnecessary

It is not absolutely necessary to build mating nuclei. There is a way to supply the colonies, which are to be requeened directly and safely with ripe queen cells, without much interruption in brood-rearing. With such cells on hand the beekeeper may proceed as follows: the old queens have to be found and removed from the colonies. Within an hour a colony becomes aware of the absence of its mother. Bees begin running over the combs, searching for the queen. Upon reopening such a colony, with the application of smoke, the typical distress hum of a queenless colony is heard. A colony in this state of excitement will readily accept a ripe queen cell without starting queen cells of their own from enlarged worker cells. A piece of comb should now be cut out from the vicinity of the brood nest. A ripe queen cell slightly dipped in honey from a punctured comb of the same colony should then be inserted. After cleaning the cell the bees soon return to their normal behavior. Great care should be taken to give these ripe cells to colonies not much later than an hour after the removal of the old queens. If queen cells are not introduced in time the dequeened colonies reorganize soon after and immediately extend special care to some worker larvae in order to rear a replacement queen of their own. Once recognized, the acceptance possibility of a ripe queen cell is greatly reduced.

Ten days later, the eggs of the young mated queen should appear. A small percentage of virgins will be lost during

Experimental apiary of the University of Wisconsin, Madison.

their mating flights, but colonies can easily be resupplied with ripe cells after queen cells of their own construction have been destroyed. If requeening is done approximately at the end of the major honey flow, colonies go into the winter with an abundance of newly reared workers and each with a young queen.

Suitable Drones Important

Even though all of the queens in the apiary are full sisters, the qualities of their worker offsprings will be subject to great variation due to the fact that the virgin queens have mated with drones of various origins, transmitting desirable and undesirable characteristics. The next season, however, will bring the rearing of drones of great uniformity. These drones are produced from unfertilized eggs and consequently receive their heritage from their mother alone. Regardless of the queen's mating, her male offspring will transmit only traits received from the mother directly since drones lack a male parent. The drone flight, in the vicinity of the apiary, will largely consist of such drones. Another lot of virgins reared from the breeder chosen the previous year, will mate with this better grade of drones, and if the new queens are reared early enough, the results of the selection and mating will show before the season comes to a close.

A few miss-matings, of course, are likely to occur, but it is an easy task to eliminate such queens and introduce new cells. Even though this is in-breeding, it has no detrimental effects upon the stock, as is often feared. Most of our highly productive strains of domestic animals such as dairy cows with a high yield of butter fat, efficient working and saddle horses, poultry with a high egg-laying ability, etc., have been produced by in-breeding after careful selection. After the second requeening the virgins will largely mate with drones which are the direct offspring of their older sisters. The animal and plant breeders call such a selection of parents a back-cross, largely used in genetic work to fix desirable traits.

Systematic Requeening Necessary

After the second season the beekeeper should not expect to have uniform gentleness and production throughout the apiary, because of the segregation of factors which determine less desirable traits. Continued careful selection of breeding queens in coming seasons will lead to a gradual elimination of undesirable traits and lead to a point of high perfection. A few years of systematic selection will yield surprising results as far as gentleness and industry are concerned.

This same system of repeated requeening may also be used if a beekeeper intends to change the race of bees in his apiary, e. g., from German to Italian bees. With one good Italian queen an entire yard of black bees may be changed to yellow within two seasons. Just as it is possible to eliminate the black color from a yard entirely, by breeding only from one yellow queen, so it is also possible to eliminate characteristics other than color, by systematic requeening.

Desirable Characteristics Found During Poor Season

Honey production and gentleness are

two breeding aims which can be easily selected and produced at the same time. Gentleness is a very obvious characteristic and anybody is able to distinguish a cross colony from a gentle one. Not so simple is the determination of the productivity of a colony. This needs scale hives with daily recordings, as well as a careful weighing of the removed surplus honey and the reduction of the required fall feeding.

Some colonies, which store all of their honey in the supers, leaving the brood-chamber bare, often appear to be excellent producers, but are not very profitable after the cost of the necessary winter feed has been deducted from the amount of honey produced during the season. The diagnosis of a good producer is greatly simplified in a poor season. During a normal season with a good and fast honey flow almost any colony will gather a fair crop and at harvesting time the larger yield of the better producers does not appear very conspicuous.

In a poor season, however, there will be colonies in the yard which on account of favorable traits partly overcome difficulties such as scarcity of nectar, unfavorable climatic conditions, etc. Their higher yield usually stands out above the rest of the colonies. They can produce a fair crop in almost any environment.

Modern bee breeding along certain lines has still other aims, such as disease resistance, red clover pollination, flight in low temperatures, resistance to severe winters, characteristics necessary for successful comb-honey production, lowering of swarming propensity, and many others; some of them being in the field of highly specialized beekeeping and others confined to scientific workers, who in order to approach the desired results sooner, apply instrumental insemination.

Gentleness and industry in selective breeding should be the aim of every beekeeper who engages in queen rearing. The author himself on two occasions took over yards with extremely heterogenous populations and succeeded in producing strains uniformly gentle and highly productive. Although no attention was given to the marking of the bees, the generations after the second selection were of a pleasing uniform coloration. In one of the two cases at the end of the second season six strong colonies were exhibited at the Minnesota State Fair and placed five feet from the sidewalk of the Main street, where thousands of people walked by from early morning until late at night. Not one casualty occurred during the entire week, not even during the numerous demonstrations, when combs heavily covered with bees were passed from hand to hand by the spectators.

Madison, Wisconsin.

Over-abundant queen-cells are hatched in nursery cages, the virgins transferred to introducing cages and distributed wherever there is room. Three summer school students of the author.

The Remedial Value of Stings

E. R. ROOT

How Bee Venom Has Been Able to Accomplish Miraculous, Almost Unbelievable Cures in Cases of Arthritis or Rheumatism; Testimonies from Laymen, as Well as Doctors Who Have Tried This "New-Old" Specific

The material given under this heading is taken from a new book by Dr. Bodog F. Beck, which will be published this month by the Appleton-Century Company, entitled, "Bee Venom, Its Nature and Effect on Arthritic and Rheumatoid Conditions." Dr. Beck has spent a lifetime on the study of the effects of bee stings in the cure of the diseases mentioned. The vast amount of testimony that he has gathered from lay as well as medical men, is astounding. The cures attributed to bee venom are miraculous, almost unbelievable.

For years the Senior Editor of this journal has been saying in his public lectures and in his articles on bees that the pain of the bee sting was so acute that it completely obscured the rheumatic pains and hence left the sufferer to believe he was cured. In other words, he has implied all along that there was no virtue in bee poison as a remedial agent. However, the evidence presented in Dr. Beck's book is so overwhelming and convincing, especially the testimonies of medical men, that we of the Gleanings' staff feel that it is our duty to present a review of the work and let the public draw its own conclusions.

If the reader has rheumatism and is convinced that bee stings will cure him, he could take one or two stings at first and if he suffers no severe reactions he can gradually increase their number. Anshov describes the whole technic both with live bees as with the injectable bee venom; which is exclusively used in the European countries, but almost unknown in the United States.

The heart action should be checked by a physician. A person past middle life may have a weak or affected heart; if so, he should go slow. The review of Dr. Beck's book certainly merits a careful reading by one prepared to weigh the evidence presented.

The belief that people, when stung by bees, are cured of rheumatic ailments has been handed down for generations. History mentioned that Charlemagne, the great conqueror (8th century) was cured of his obstinate gout by bee stings. From time to time statements have been made that it also prevents cancer and promotes longevity. There are several resorts in Europe where "bee-sting cures" were, and are still administered and regular pilgrimages are made to these places by rheumatics who travel there from faraway countries to secure relief from their painful afflictions. Even physicians have submitted themselves to these "treatments."

Many periodicals have received reports of cures effected by bee stings, with the request that the medical profession should investigate the facts. Often even medical papers have referred to these reports, and some physicians have sent out questionnaires to medical fraternities, asking for information as to whether they have any knowledge of such cures. Numerous replies were received, in which the writers stated they knew of cases where even crippled and paralyzed patients have been perfectly cured by bee sting injuries.

Another well recognized fact was also often mentioned: that beekeepers during their occupation, continuously exposed to stings, gradually become accustomed to them—they acquire immunity to their effects, and besides never suffer from arthritis, rheumatism, or gout. If they were afflicted with these maladies before taking up beekeeping, they are usually cured, without suffering any further recurrences.

The response from the medical profession to these appeals has been rather slow. This is only natural, for only a physician-beekeeper was capable of administering such treatments. Of course, an ideal combination would be a physician joining hands with a beekeeper, but professional men, as a rule, are unwilling to do this.

Meanwhile, in entomologic and bee journals, and in the daily press, scattered articles have appeared about inexplicable cures produced by bee stings. For many

centuries it has been their favorite topic. Here are some of them:

More than a century ago, in the German Frauendorfer Blatter, an article appeared, reporting the occurrence of a peculiar case; a woman with a paralyzed arm was stung by a number of bees and, as a result, recovered the use of her arm. The writer of the article appealed to the medical profession to explain this miracle, suggesting and inviting a thorough investigation.

T. P. Demartis, of Bordeaux, France, who wrote a series of articles about the use of animal venoms in medicine, published a letter in L'Abeille Medicale (July 25, 1859) which he received, in connection with his research work, from a M. De Gasparin, describing his experience. M. De Gasparin was reduced to permanent infirmity by chronic rheumatism and bronchitis. He tried all medicines and various spas—without obtaining any relief. One day, while walking in his garden, he was stung by bees on his arm. The arm swelled considerably, but his rheumatism disappeared. De Gasparin farther stated that with the same method he later cured his chronic bronchitis and also a painfully swollen gland. He had knowledge of other rheumatic cases cured the same way and also of two cases of cancer of the face. De Gasparin complained that, though he mentioned these facts to several of his medical friends, they not only did not attach any importance to his statements but instead absolutely ridiculed the whole idea. He requested Demartis to champion this authentic information and make a propaganda for it.

M. Lukomski, Professor of Technology at the Institute of Forestry of St. Petersburg (Leningrad), Russia, published an article in the Gazette des Hopitaux (No. 107, September, 1865), reporting the cures by bee stings, not only of rheumatic and neuralgic ailments, but of intermittent and remittent fevers and various tumors. He suggested that the medical profession try this method for pest and cholera. Lukomski suggested the technical term apisination for the procedure.

Several years later, P. Fabre lectured on the subject before the Academy of Medicine in Paris, referring to these publications and also reporting his own experiences. A "poor devil" near Nice, crippled by rheumatism of his legs, exposed them to bee stings and was perfectly cured. Two other inhabitants of the vicinity had similar successes.

The Annal de Societe Entomologique quoted several cases. A veteran, Fernand de Vingeanne, who had acquired a very bad rheumatic ailment during the 1870 campaign, was completely cured of it after he had been stung by bees. A retired facteur rural (letter carrier), who for some time had been unable to walk, fully recovered after being stung by about a dozen bees. The Entomologische Nachrichten (1878) occasionally published similar remarkable cures. A brewer, stung by about half a doznn bees, lost his painful gout, and all his symptoms disappeared. A nine-year old child of an innkeeper, in Rettenbach, Oberpfalz, previously unsuccessfully treated for the ailment with all possible methods, recovered perfectly after having been 'exposed' to a number of bee stings.

The London Medical Record (XIII, 1885, page 178), stated: El Siglio Medico, related a singular case from La Plaz, Bolivia: A woman suffered so much from rheumatism for six months that she was hardly able to sleep. Her right arm was absolutely useless, she could not even dress herself. She heard about cures from bee stings, procured some bees, applying only three stings the first day. The result was so surprisingly beneficial that the following night she was able to sleep, and her pain entirely disappeared.

Dr. Packer, of Kansas City, in 1904, reported a case of a man named Gardner, who had been afflicted with articular rheumatism for four years, and unable to walk except with the help of crutches. In August, 1903, he was hobbling around the yard when he fell against a hive and upset it. The enraged bees pounced upon him and he was nearly stung to death. He became very ill, but recovered and found that his rheumatism had disappeared, suffering no further attacks.

In 1910, Dr. Ainley-Walker published a questionnaire in the British Medical Journal, in an effort to ascertain whether there is any truth in the popular belief that bee stings cure arthritis and rheumatism. He asked for evidence in favor of it or to the contrary, and also about the character of the rheumatics who were stated to be cured. Here is what he received:

A physician, Dr. Burton, of Birmingham, for instance, answered that he had tried this "inoculation" on himself. He was attacked by acute arthritis of the right hip, and sciatic nueritis. Nothing gave him relief. He sent for some bees, and after receiving his supply he put about eight over the sciatic nerve and the hip joint. Next morning, when he awoke, not only was he able to turn in bed but he could walk across the floor without limp or pain or the necessity of holding to the bedpost, as he had had to do for the previous three months. He put six more bees on, the same evening another six, and the final installment two days later. Afterwards he was able to run fifty yards without pain. He added that he was 67 years old, had been a rheumatic subject for the previous twenty-five years, and had decided to continue the applications of bees. Nothing had given him a more "avaricious" appetite. Burton later administered the stings to his own patients and reported remarkable results.

A layman (J. D. M.) wrote to Dr. Walker from Australia that he had suffered from rheumatism of the shoulder for twenty-five years. Nothing helped him. He decided to try bee stings. He applied them to his shoulder and by the end of a week he was free from rheumatism. A year later, the ailment returned. He put on twelve more and forty-eight hours later six more, and was then free again for three years. A short attack was similarly treated, and since that time he had had no recurrences. The same correspondent cited another case, a woman whose hands had been "stiff and gnarled" from rheumatism. She was accidentally stung by bees on her hands, and by the end of a week her fingers became almost as "lissom" as ever.

Surgeon Major-General Johnson, of Virginia, wrote to Dr. Walker that the belief was prevalent in the United States. He saw the "treatment" applied, in the case of W. T., for acute rheumatic fever, with 103° F. temperature, with the result that in 24 hours the temperature became normal, the joints were free from pain and freely movable. The same patient later reported a subsequent attack, which was similarly cured.

Dr. McLay, of Lincolnshire, cited a case of rheumatism of the shoulder, with great stiffness and pain of two or three months' duration, which was cured by accidental bee stings on the hand.

Dr. Valentine Rees reported that he himself had lumbago for a week, and was absolutely unable to move. A clergyman, who suffered from chronic gout for many years and began beekeeping for that reason (since which time he had been practically free from pain), applied the bee treatment to the doctor. The doctor immediately recovered.

A physician, answering Dr. Walker in The Lancet, related an interesting episode as proof

of the belief that bee venom is used for rheumatism. He was traveling on a cargo boat when one of the mates showed him an apparatus used by his father, who had suffered from a severe case of "rheumatism of the spine." The contrivance consisted of a cylinder and a piston, the latter being suddenly released by a spring. On the "business end" of the piston there was a concentic set of projecting needles. The apparatus was applied over the affected parts, producing scarification. It was an instrument similar to that which is employed in modern tatooing, but instead of ink, a dark viscous solution was used, which was given to the mate's father by a German chemist. This was prepared from the venom of the bees. The informant told the doctor that his father had derived great benefit from its use.

Only a comparatively short time ago (1913), an article appeared in France in the Journal de la Santé, relating quite a number of cases cured by bee stings, and requesting the medical profession to kindly take these facts under consideration and explain them. A farmer, who could hardly move on account of rheumatism, was stung one day by several bees. He noticed immediate relief and notified his family physician, asking him to continue the "treatment." The physician applied eighteen bees weekly. The result was almost miraculous. The same physician later on had similar success in other cases. For instance, he treated a young girl who suffered from a painful rheumatic condition, and a violinist who for years had been unable to hold a bow in his hand but soon after treatments he was able to resume his profession. Even in chronic cases, this physician found bee stings to be a valuable remedy. The treatments were started with five or six stings, the number being increased to twenty-four weekly, according to age. The doctor put the bees on the skin with a forceps and kept the stings in position for about five minutes.

Henry Bouquet, medical correspondent of Le Temps, in the January 31, 1924, issue, said:

> I wrote an article some time ago about the grave dangers of bee stings and I think it is time now to be fair to the little beasts, to rehabilitate them and speak about the wonderful curative value of their stings. It is rather strange, that in spite of all the testimonials in its favor, this method is still under consideration by the medical profession.

Various other scattered articles have been published in the foreign medical press. Marfort of Geneva, E. Monin of Lyon, and Kruger of Nimes, reported cures of chronic cases of rheumatism with bee stings. Larmache of St. Marcellin, stated that several of his patients assured him they had used the method with great success, after all other remedies failed. Lamarche, himself, suffered from neuralgia and rheumatism, but after taking up beekeeping, exposing himself to stings, he was cured. He tried the treatment on a woman who suffered from an extremely painful sciatica, spending her nights groaning in agony. She obtained relief after only five stings and was entirely cured in a few more sittings.

The correspondent of the New York Times reported from Kansas City, Missouri, in the July 29, 1928, issue, that the oldest resident of Olathe, Kansas, maintained for years that nothing was quite so effective for rheumatism as bee stings, but said, of course, the younger generation scoffs at that. He stated that F. B. Haskin, President of the Patrons Bank, who did not class himself a believer of this theory, suffered from rheumatism for 6 weeks. One day his son called to him that the bees were swarming on his farm. He hobbled out and the medically-inclined bees apparently thought that he had come for treatment, so they stung him on the face, arms and back. Altogether he received 5 stings. Next day he was entirely relieved from his rheumatism. He said he was not a new man by any means, but certainly a repaired one, and recommended bee stings to anybody who had hardihood, fortitude and . . . rheumatism. The little "buzzers" do the work.

In one of the Duluth, Minnesota, papers an article appeared (November 11, 1933) which stated that August Halgren, 73 years old, who had been badly crippled with rheumatism seventeen years ago, started a bee farm at the time because bee stings were supposed to cure rheumatism.

> "It worked," he reported. Not only did it work, but it provided Halgren with a prosperous business. He now maintains a farm of 157 bee hives. All comers are supplied with enough bee stings to cure their rheumatic pains. A Duluth grocer, virtually crippled when he first visited Halgren's farm, credits his bees with a complete cure. Halgren charges nothing for the treatments at his "bee clinic." "I was cured by a good will offering and that's the way I will cure you," he tells each patient.

Recently (1933) during the opening of National Honey Show in the Crystal Palace, London, one of the exhibitors, W. A. Whitlam of Thornton Heath, said:

> I suffered from rheumatism so acutely that I had to take to bed. I took up beekeeping and like all beekeepers I was stung frequently. The more I was stung the less I was troubled with rheumatism. This year I was stung hundreds of times and my affliction has gone. Sufferers from rheumatism are less subject to swelling from stings than normal people and they also feel less pain.

Dr. Beck remarks that the enumeration of all these cases which he quoted has really no scientific significance or value except for the fact that the consistent reports ought to have been of sufficient importance to arouse medical attention.

But the response from the medical fraternity was not appreciable, the reception was rather cold, mingled with a certain amount of doubt—even ridicule and contempt. It was a lay discovery and to enter into competition with the laity was below

the dignity of any member of a high and noble profession.

The experiment (?) was taken up ages ago, dropped and revived many times. It was brought to life for a while, just to be discarded again. It was a tedious and tinkering performance, with plenty of inconveniences, often difficulties, requiring a great amount of perseverance to carry out the treatments. It was frequently revived because there was a great need for a remedy to cure such obstinate maladies as arthritis and rheumatism, in most instances refractory to all other medications.

The Experience of Dr. Terc

Dr. Phillip Terc, an Austrian provincial physician of wide repute, was certainly the greatest exponent of bee venom therapy. Terc used live bees in thousands of cases for over forty years, with such success that he made the statement that almost every case of true rheumatism or arthritis can be cured with bee stings. Terc thought that there must be an intimate relationship between the venom of the bees and rheumatic conditions; namely, a sufferer from rheumatism does not react to the effects of the venom in the same manner as a normal person does. The more chronic the case is—the less reaction is evidenced. Sometimes Terc was compelled to apply 150, even 200 stings in one day to a patient, without being able to provoke a reaction.

Through perseverance, Terc even succeeded in curing arthritis deformans in a person who was completely crippled, where the disease had persisted for many years, but he had to apply altogether as many as 5600 stings to the patient. The condition gradually improved, patient looked fine, was able to attend to work, and walked for hours without pain.

What influenced Terc to employ bee stings in curing these ailments was that he himself suffered from an obstinate case of rheumatism. One day he was painfully stung by a number of bees with the result that his ailment was cured. He heard similar reports but ridiculed the idea as much as others still do. His experience impressed him, he realized that it was a remedy worthy of trial but he did not know how to go about it.

His first case was treated in 1879. A woman, suffering from a severe case of neuralgia in the head and deafness, came to him for advice. So far her ailment had defied all treatments employed by other physicians. Terc himself could not give her any relief, though he used his best efforts. One day the discouraged patient expressed her disappointment, and said she had surely depended on his good and great reputation and expected that he would employ a new method which would afford her some relief. Terc remembered his own experience. Anxious to help, he decided to try the application of bees. Terc called on her daily, putting bees on her head. The stings had no effect on her. He applied about ninety stings without any reaction or improvement, which fact great surprised him. One morning he applied 15 more stings on her neck and shoulders. The patient later sent for him to come without delay. Arriving at her hotel, Terc found the patient's face terribly swollen—she was unable to open her eyes but she was jubilant, as all her pains for the first time in a long while were gone and she clearly heard the sound of the church bells. She was permanently cured.

This case greatly impressed Terc and gave him plenty of reason for reflection, also an impetus for further experiments. He could not comprehend why the patient did not react to the stings and when she responded only then the improvement manifested itself. Later experiences confirmed the supposition that mild cases react to a few stings and obstinate cases require hundreds of stings, the delay in reactions mathematically corresponding with the chronicity of the case.

Terc was very proud of his success in treating inflammatory rheumatism, for which ailment he considered bee stings a specific. In one of his reports in 1912, Terc published 660 cases of all types of arthritis and rheumatism, out of which number he achieved success in 82 per cent. Some of the patients gave up the treatments, which accounted for part of his failures. Alfred Keiter of Graz, Austria, Terc's assistant for many years, continued his work and the two physicians published excellent results in well over 2000 cases which they treated.

Another illustrious champion and friend of apitherapy was Ernest Lautal of Marseilles, France. He was an apiarist and besides, a philanthropist. His treatments were not restricted to rheumatism alone, but to various other diseases so far considered incurable. He had a model apiary and an office, where in addition to rheu-

matism and gout, he treated lupus (skin tuberculosis), cancer, eczema, and leprosy.

Lautal stated that he never thought the stings of the honeybees would cure all these ailments, as only a few physicians recognized their curative effects. He cured many desperate cases—where the sufferers were ready to make an end to their lives—and were later happy at being cured.

To quote Lautal:

For many years I suffered myself from an obstinate eczema over the whole body, especially on my hands and forearms. I was under the treatment of many dermatologists but could not obtain any relief. One day while handling bees, I was attacked on my left arm, against my wish, by a great number. The accident was for me a source of great anxiety, not only because it caused me considerable pain, but I was afraid that my skin trouble would become worse. To my great astonishment the eczema soon entirely disappeared from that arm. The incident gave me an idea and I tried the same treatment upon my right arm and exposed it voluntarily to bee stings. The result was likewise satisfactory. I continued the experiment and succeeded in curing all my skin disease. I administered the same treatment with great success to others.

I then extended the field of my experiments in the treatment of tuberculotic affections of the skin and had unexpected and surprising results. Obstinate and rebellious cases of neuralgia also rapidly yielded to apipuncture, and I can see the time when this treatment with bee stings will be an accepted method for rheumatism, eczema, lupus, cancer, leprosy, and many other diseases.

Lautal stopped epileptic convulsions with bee stings. He also suggested their application as a control in doubtful cases of deaths, in the absence of a physician, as bees obstinately refuse to sting a corpse and if the act is forcibly induced it will not provoke an inflammatory reaction as on a living person.

Lautal's successes aroused so much recognition that he was permitted to install apiaries in the principal hospitals in Marseilles and patients were entrusted into his hands for treatments. Professor Boinet introduced several cases of leprosy and lupus cured by Lautal's method. Other physicians of Marseilles greatly praised his procedure.

Bee Venom Artificially Injected

During the last few years, several scientists have succeeded in extracting the venom of the bees, and have dispensed the substance in vials, to be injected into the skin. The administration of this injectable bee venom, faithfully imitating the bee, is supposed to have the same effect as the natural stings.

(Continued in February issue.)

Early Beekeepers of Old Northwest

JOSEPHINE E. PHILLIPS

Bees Played Their Part in the Life of the Early Settlers

When the old Northwest Territory—comprising the present states of Ohio, Indiana, Illinois, Michigan, and Wisconsin—was opened for settlement in 1788, the first-comers lacked a number of things which they had considered essential in the East. Salt, for example, sold for as high as eight dollars a bushel, and it was very poor salt at that. And sugar in any form was practically unattainable at such a distance from the coast. There were plenty of sugar maple trees, but iron kettles large enough to be useful in boiling down the sap from them were scarce indeed. They were articles too heavy and cumbersome to be packed over the mountains on horseback and thence down the Ohio by flatboat.

Lady Martha Washington must have known the situation and sympathized with the unappeased "sweet tooth" of her friends, for in the spring of 1792 when General Rufus Putnam came to Philadelphia as a representative of the Ohio Company, she sent back by him a big "kegg of loaf made from maple sugar to be distributed among the ladies of the Officers of the Revolutionary Army residing in the Ohio Company's purchase" in Marietta.

General Putnam himself may have felt the need of something sweet to vary the taste of his daily bowl of cornmeal mush. Anyhow, he was one of the first to keep "tame" bees. Where the forest was not too dense there was wild honey, eagerly sought after by the pioneer boys, but the surest way of having a supply of the delicacy was to manage one's own hive. It was in 1794 when Putnam's house was still a part of the "Campus Martius" stockade and while the Indian War was still raging, that a young relative, Israel Putnam III, journeyed to Marietta from his home in Connecticut. From the following entry in the manuscript journal of this gentleman we learn that the many civil and military offices held by Rufus Putnam were not the only things about him which gave a very favorable impression:

"Friday, 2nd May, 1794. Beautiful morning. . . . The General seems to be the most sage old man that I have ever seen. After dinner I had some conversation at his land office alone, and he showed me the plots and plans of the whole of the land of the Ohio Company's Purchase. I could not look upon the General but with veneration and love for his philanthropy; for seeing him upset in hiving a swarm of bees and the softness, tenderness and kindness he expressed in hiving the pretty creatures and the sorrow he expressed for a few poor bees that happened to be killed in the hiving, made me prepossessed in his favor, so that I shall always love him for his tenderness to the bees."

Another of the famous early inhabitants of Marietta was a beekeeper, Samuel Prescott Hildreth. Dr. Hildreth was a physician, naturalist, geologist, gardener, and historian. In his autobiography he writes: "Although my ground was small, being only half a city lot on which stood my house and barn—I also kept honeybees, and for many years took not less than a hundred pounds of honey annually. They were arranged in colonies, or separate divisions, in the structure of the hives so that I could take the honey without destroying the bees. Peter Taylor, an old Englishman, for several years gardener to Blennerhassett, used to assist me about the garden, and instructed me much as to the habits of bees."

Marietta, Ohio.

The Land Office still stands almost opposite the Rufus Putnam house.

Selling Honey in a College Cafeteria

CHARLOTTE H. MERRELL

Another Method of Increasing the Per Capita Consumption of Honey

Students in college cafeteria kitchen preparing food.

Is there a beekeeper alive who would not feel proud and happy to find honey being used and featured in every hotel, restaurant, cafeteria, and hospital in this country? The traveler who returns from Europe tells of invariably seeing honey included on the breakfast menus of the fine eating places abroad and he has probably tasted it prepared with other foods, whether he recognized it or not. It is unfortunate that it is used so little in the commercial food serving establishments on this side of the Atlantic. A cafeteria or restaurant is an excellent place for honey to make friends. A person may try it without spending even as much as the price of a small jar or comb. In combination with other foods, prepared by skilled cooks, he can see that honey may be used in a variety of attractive and appetizing dishes.

For several years I was a hospital dietitian—at different times employed in three hospitals in as many states. I regret now that I didn't know more about honey then or try to serve it in these hospitals. Surely it should be used constantly in such places, intended solely for restoring health, and where there are such heavy demands upon the health and strength of the nursing staff. And what an advertisement for the healthfulness of honey it would be if every hospital were serving it to its patients and nurses as part of a well balanced diet.

Cafeteria Starts Using Honey

When I became a beekeeper's wife, I was assistant manager of a college cafeteria. My duties included planning the menus and doing the buying, which gave me an excellent opportunity to try to increase the sale of honey. Honey was already being served in this cafeteria, but only with pancakes and waffles (and there was maple syrup for those who preferred it) and about twice in the fall comb honey with hot biscuits. That wasn't enough! Here was this cafeteria, making an effort to use the farm products of the state and constantly trying to serve more appetizing and healthful meals at a price within the students' means, and honey was used only in very small quantities!

I believe the beekeepers are partly to blame for our failure to use more honey. If they could see and hear the high pressure salesmanship, the samples and demonstrations that introduce other products to those who do the buying for the public eating places, they would not wonder that honey is sometimes forgotten. I can't resist mentioning one "high pressure" honey salesman. He is the only one I ever saw. He came to the cafeteria soon after I was married—so soon after that I still felt conscious of my new wedding ring on my finger—and tried to sell me honey. I told him we were buying of someone else and were quite satisfied with the product and the price. After a great deal of insistence that I try his honey, I said, "You may as well go. I have just married your competitor." He left at once, apparently thinking the competitor had carried things a little too far.

Patrons Like Honey

Bread and honey have long been mentioned together and we found that in combination with some breadstuff, honey seemed most popular. When baking powder biscuits were served, the comb honey squares or two-ounce pitchers of liquid honey placed beside the biscuits on the cafeteria counter needed frequent replenishing. Honey with cornbread was somewhat less popular. Much more honey was used at a meal when honey graham muf-

fins or honey pecan rolls were on the menu.

For the graham muffins we used this recipe: Butter substitute, 4 pounds; honey, 3 quarts; eggs, medium size, 30; milk, 6¼-6½ quarts; graham flour, 8 pounds; white flour, 8 pounds; baking powder, 2⅔ cups; salt, 2½ ounces. This makes 24 dozen muffins.

The honey pecan rolls were made by rolling baking powder biscuit dough to ⅛-inch thickness. It was spread with melted butter, then with strained honey and sprinkled with broken pecans. This dough was rolled up, cut into slices about ¾ of an inch thick and they were baked in well-greased muffin tins. How they did sell! Often 225 were sold at a noon meal. The rolls were also made with a raised dough and were equally delicious.

Section of cafeteria counter showing honey baked custard.

Other well liked honey dishes were: A casserole dish of sweet potatoes and apples sweetened with honey, honey baked custards, a dark raisin graham bread sweetened with honey, and sandwiches spread with a mixture of peanut butter and honey. Small amounts of honey were used in fudge frostings, to keep them fine in grain and moist and fresh appearing, in salad dressings and in fruit cups. Honey made a delicious glaze on the baked hams but few realized what they were eating.

Honey Instead of Butterscotch Sauce

I remember that a beekeepers' meeting was held at the college one year. Many of the beekeepers ate at the cafeteria during the convention and honey was served at every meal. One noon honey-nut sundaes were featured. After the meal was over someone placed the pitcher of honey, used as sauce, in the refrigerator with the other sauces. When chilled it resembled the butterscotch sauce so closely that they were accidentally mixed and it was not until somewhat later that we discovered that the combination had been served to a number of patrons for butterscotch sauce and no one had complained. It made an excellent "trimming" for ice cream and would have been equally good on a cornstarch or cottage pudding.

It was interesting to notice that the patrons who used honey in one form seemed to like very much any honey dish that was served. Sometimes one would ask for a pitcher of honey and put it to a use that was new to us:—as a sauce for bread pudding or to eat on some fruit, for instance. Others were a little more skeptical of honey dishes. "Is it good?" "I never liked strong honey," "Is this strong?" or "Well, it looks good, I'll try it." Our patrons seemed to prefer the light honey and we used this exclusively. Another cafeteria on the same campus where there was a large Jewish patronage found buckwheat honey more popular. Tastes will vary in different localities and among people of different nationalities, but a mild flavored honey is probably the safest choice to offer to those who are just learning to like honey.

Need Education Regarding Honey

When honey is sold to the institution the storeroom keeper should be warned that it must be kept at a suitable temperature. Otherwise it may be stored in the refrigerator. A word about preparing it for use may be helpful. At the cafeteria the pitcher of honey always stood in hot water for a few minutes before the pantry woman tried to fill the 2-ounce pitchers. It was a great saving of time and disposition. When the pastry cook was to use it for spreading on biscuit dough, she chilled it first. It made a little heavier coat of honey on the dough.

Remember that the average manager or restaurant or cafeteria has no particular interest in pushing the sale of honey. Before buying it he will ask himself these questions: "Do my patrons wish it? Will it make other foods more attractive and appetizing? Will I have a fair margin of profit from its sale?" It's up to the beekeeper to show him the correct answer to all three questions is "Yes"!

Wolcott, New York.

Gravity System for Clarifying Honey

LLOYD C. GARDNER

Honey is Given a Chance to Clarify Before It Is Drawn from Tanks

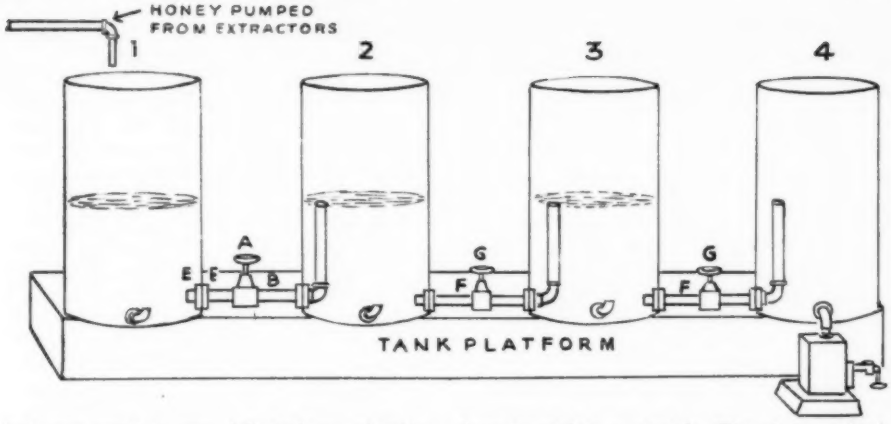
Lloyd C. Gardner.

It has seemed to me that the preparation of milk or honey required more care than most all other foods. One could not be too careful if he wished to tempt the palate of those visiting the dairy in the case of milk, or the extracting plant in the case of honey. At best, honey is very difficult to handle. Avoiding sticky messes requires thought and careful preparation. Even the well initiated sometimes get into difficulties.

Most beekeepers find their biggest problem at extracting time to be the clarifying of the honey, especially if it is very heavy and simply refuses to go through a strainer without first being heated. In our early experience we had trouble with clogged strainers that had to be squeezed out by hand. I believe we tried every scheme that looked plausible, even a centrifugal strainer, with very little satisfaction, until we began to experiment with gravity settling.

Seeks New Method

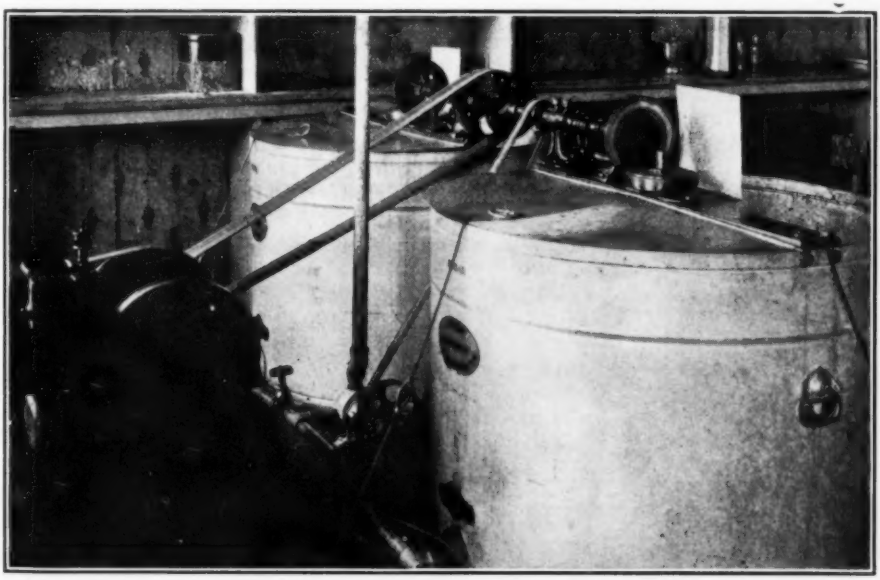
In order to carry out this experiment, we had two one-ton capacity tanks made of heavy galvanized iron and placed on a platform high enough from the floor to permit a sixty-pound can to pass under the honey gate on a small platform scale. It took nearly a day at that time for us to fill one of those tanks and by pumping



into one until it was full before going to the next, the first would stand until the morning of the second day before draining. We reasoned this would be sufficient time for most of the wax particles to rise to the surface of the honey. Also, if it were successful, the time always before required for extracting would be almost cut in half.

This proved to be much better than the old way, yet it was not entirely satisfactory as the clarifying was not complete in that length of time and in order to give more time, two more tanks of the same capacity were added. By filling them in rotation the first tank of honey had four days in which to clarify. The plan worked so well that we used it a number of years before increased production and sagging prices for honey necessitated a change to something more speedy.

To this end I visited a number of the large extracting plants, and while I saw some very elaborate equipment with thermostatic controls and the like for heating the honey as it was being conveyed to the storage tanks, none filled the bill. I wanted a gravity system similar to the tank system I was using, which would require no large outlay of capital. I could see no advantage to these heating systems. On the contrary, the most of them



Lloyd C. Gardner's extracting outfit. The shafts are connected with a fiber universal joint, permitting each extractor to be independently operated.

were expensive to operate, and in some instances were the cause of much grief.

Hits on New Idea

Realizing there could be no advantage in simply connecting settling tanks at the bottom in series, I hit upon the idea we now use, which I believe is a big advantage over anything I have ever seen.

The illustration shows a pipe extending nearly halfway up inside the tanks, numbers 2, 3, 4. This is the most important feature of the entire hook-up. Its relation and importance should be explained before going into further detail.

It is readily seen that if the drain gate on No. 4 tank be left open, it would be the only one to drain to the bottom. The others would only drain halfway. On the other hand, without these upright pipes, all would drain out. Therefore, without these upright pipes, and unless the gate valves between each were closed until the tank ahead was filled, unsettled honey would carry over into all the tanks. Even following this method and to make a continuous operation through the tanks, opening the valves alternately, more or less unsettled honey would carry over. The weight above the inlet would exert enough pressure on the incoming honey to cause some of it to flow across to the outlet and into the next tank.

The System is Simple

Since with these upright pipes it has been shown that tanks 1, 2, and 3, will not be less than half full at all times, and since the connections are at the bottom, it is readily seen that the honey more free from wax particles flows from one tank to the other emerging from the outlet halfway up into the tank, not disturbing the honey from this point down.

The drawing-off process is from tank No. 4, and, although the honey can be drawn almost to the bottom quite free from sediment, best results are obtained by drawing not more than two-thirds the way down.

Experience has taught us that the ideal size for the pipes and connections should be as follows: Between tanks 1 and 2, a two-inch pipe, and between 2 and 3, and 3 and 4, a one and one-half inch pipe. The reason for the larger pipe between the first and second tank is to avoid running over the tank into which honey is being pumped. A steady stream from a one-inch honey pump keeps practically even with this two-inch pipe gravity flow. A one and one-half-inch pipe takes care of the others nicely and slows down the flow to the point for best results.

Connections are made as close to the bottom as possible. Rubber gaskets are fitted next to the walls of the tank inside and out, followed by metal washers and lock nuts. The pipes are cut to suit the desired distances between tanks. Ordinary gate valves the same size as the pipes are used.

To set the system in operation, all valves are closed. No. 1 is pumped into until it is filled. The valve between it and No. 2 is then opened and the pumping continued until both are filled before the valve between No. 2 and No. 3 is opened, and so on through to No. 4. It is best to arrange the system so as to give No. 4 when first filled time to settle overnight before drawing off, after which the drawing-off process may be continuous.

Delaware, Ohio.

One of Lloyd C. Gardner's apiaries.

From the Field of Experience

PORTABLE ROADSIDE UNITS

If Not Successful at One Location They Can be Moved Easily to a Better One

The roadside market is a potential source of considerable profit to the beekeeper who is situated so he can take advantage of it. However, the beekeeper who does not live on the highway will find the idea of a portable outfit of value, especially if he has a little spare time or there are members in the family who might take charge of such an undertaking.

Sign "teasers" are placed on either side of the car.

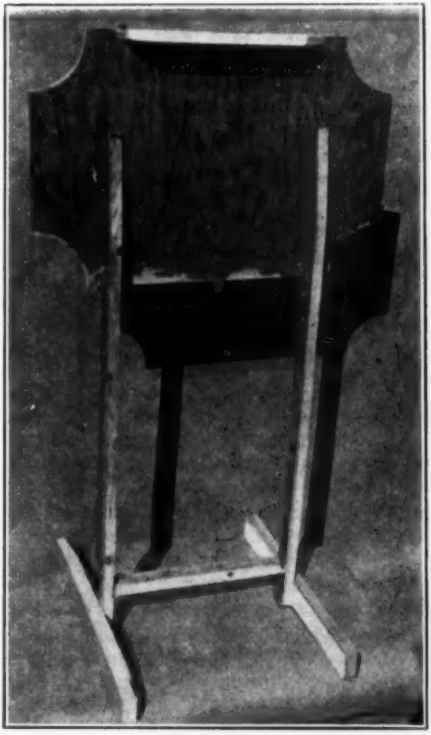
The location of a roadside market is important. It should be on a well-traveled highway. Checking the road for traffic is important so that one may have a rather definite idea of probable results in selling. Out-of-state or tourists' cars should be carefully noted as these travelers prove very good customers. This should influence the final choice.

The portable roadside selling unit should be convenient for the motorist, and visible for some distance in both directions. Motorists traveling fast are not inclined to jam on their brakes to stop at a place that flashes suddenly into view. The best location is on a straight road, in a spot where for some reason or other the driver slows up in his driving. Approach signs several hundred feet or more down the road on each side of the market will help draw attention.

Plenty of good parking space is also essential. The car should be parked far enough back so that the highway will not be obstructed. Park well in on a side road, or better still in the driveway of some home or farm along the road, first securing the permission of the owner or tenant.

A narrow, six-inch shelf is attached at the back of the one sign by means of screws. On the shelf the display is arranged. Pieces are nailed under the shelf to enable the whole to rest on the head lights of the car. At the back end of the two-way sign, on the hood, a crosspiece is fastened so that the sign rests on the cowl. At the opposite end a similar but smaller arrangement permits the sign to rest on the radiator cap. All points of contact with the car are covered with rubber protectors, cut from inner tubes to prevent any damage to the finish of car.

The price or prices you ask for the honey should be displayed in a conspicuous position so that it may be readily ob-



Shelf affixed to back of portable "teaser" stand.

served by the passersby. People are often hesitant to stop to buy when they do not know the price, and seem to dislike stopping to ask the price.

The smaller sign stands or "teasers" are placed on opposite sides of the road at some distance on either side of the car and serve to draw the attention of the

Car equipped for roadside or curb selling.

motorist. A narrow shelf is also attached at the back of these for accommodating the display jars. Displaying the honey in tall glass jars greatly increases the sales. Saturday afternoons in the smaller country towns is an excellent time for this adventure.

This method will prove profitable to the beekeper who desires to sell a substantial part of his crop by the direct sales route in addition to securing him some splendid advertising and publicity.—Benj. Nielsen, Aurora, Nebraska.

HONEY PLANTS FOR MOIST LAND

Improve Bee Pasturage by Propogating Honey Plants Adapted to Swampy Land

That there is a possibility of utilizing as bee pasture otherwise waste land in swampy areas is made plain to a close observer after following such a section of land from early spring until late fall. No doubt there are many beekeepers with land of this character who could turn it to good account by planting a few species of native plants which grow in their own neighborhood. It would, of course, be necessary to have rather extensive plantings to make any marked impression on honey production; fortunately, though, the three kinds which come to mind in this connection are not only easy to propagate but they spread rapidly after they are introduced into a good growing medium.

When one thinks of swampy land, it is natural for willows to come to mind. In practically all of the low-growing willows we have abundant producers of nectar and pollen very early in the season when brood rearing is at its height or needs stimulating. In some sections of the country where the raising of queens is an important phase of beekeeping, we find queen yards located near large, natural willow plantings.

Willows are so easily propagated that it would be little work to cover a large area with them in a year or two. Branches cut away from the parent plant near a node any time during spring and inserted in ground that is always moist should root close to one hundred per cent. A good plan would be to cut an armful of branches about the time they are coming into leaf and shove them in the ground where they are wanted to grow.

To find a bee plant for a later period of the year, one does not have to look farther than the nearest swampy areas to find Epilobium angustifolium, commonly known as the great willow herb and fireweed. The latter name has attached itself to the plant because it frequently follows where fire burns over an area and the other is probably used because of the willow-like foliage. This plant is too well-known to need description, though it may be well to mention the fact that its magenta-colored flowers are freely produced during July and August and are a prolific source of nectar, producing a transparent, light honey.

This plant, too, is easy to propagate. It spreads rapidly by means of underground runners, which may be used in multiplying the plant. Each piece of stolon containing an eye will produce a new plant if placed in a moist situation. Incidentally, this is a good subject for the ornamental garden if it is put in a part of the garden where its spreading habit will not interfere with more delicate plants. And it will make a good showing in situations far drier than its natural habits would indicate.

The smartweeds which form a conspicuous part of swamp floras throughout most of the United States in late summer and autumn, are another prolific source of honey which is often neglected by the beekeeper. There are far too many species of

Polygonum (more than two hundred are known to botanists), ranging all the way from the little, annual doorweed, a pernicious lawn weed, to shrubby species found in tropical climates. And probably not all of them are of value to the beekeeper. The best way to arrive at their usefulness as honey plants is to watch the use bees make of the ones which grow naturally in your own locality, and then propagate the ones of greatest worth. Smartweeds (Polygonum, of botanists), like buckwheat, a near relative, produce an amber honey. They may be propagated from seed, division of the clumps and from cuttings.—C. W. Wood, Copemish, Michigan.

A CAUCASIAN ENTHUSIAST

Nebraska Beekeeper Says That He Likes Them Better Than Italians

It was with pleasure that I read Mr. Jessup's article on Caucasians in the December issue of Gleanings. If I am not mistaken it was I who first got him interested in them. At that time, we had used them for two years and found them far superior to the Italians. They always started to work earlier and worked later in the day. Also they would be flying when the Italians would not fly.

We placed about six colonies of Caucasians in each yard of Italians. We have found that in order to compare races of bees satisfactory conclusions can not be reached with each race located in different yards. This year we had one yard located eleven miles from home in a locality that had several short hard showers of rain that covered only a few square miles. This yard consisted of seven Caucasians and nineteen Italians. Three of the Caucasian colonies produced 200 pounds and over, the other four beat 100 pounds. No Italian colony produced more than 125 pounds surplus.

Our other five yards were located nearer home where we had but very little rain and we secured only 500 pounds surplus from the five yards. Practically all of the surplus was taken from the few Caucasian colonies in each yard. We had to rearrange stores so all colonies would have enough winter food in these yards, but we did not have to give a single Caucasian colony any extra honey.

We have found that the Caucasians winter better than the Italians. We no longer pack bees here. Our honey flow does not start till late in June and when we pack the peak of brood rearing is reached long before the honey flow and we have swarming. The unpacked colonies have produced as much surplus as the packed colonies. Hence we have found less work controlling swarming and have saved the labor of packing.

Like Jessup, we have found Caucasians as easy to handle as the Italians. We use two deep hive bodies for each brood chamber. We have found it pays to use the shallow side of the bottom board up. They will fill in the space on the deep side any way and it stops a great deal of propolising to use the shallow side of the bottom-board.

Caucasians protect their hives as well as the Italians. They do not rob nearly so freely, so do not pick up A. F. B. so readily. And as Jessup says, it is surely a pleasure to be able to work them even under adverse conditions without putting on armor plate. We are so well sold on them that we expect to requeen all yards this coming year with the exception of a very few at home where we keep the goldens for looks only. But give us the Caucasians for honey production.—Harold I. Perrin, Sargent, Nebraska.

BUT HONEY IS A FOOD

Educating the Public to the Food Values of Honey Should Begin at Home

Daniel Winters leaned wearily against the push-button of the doorbell. There must be some better way to make a living, he mused a little moodily. Five o'clock and he was tired; he'd been tired of this before he had even started. Footsteps sounded inside. The door opened.

"But I never use honey except for the children's colds," he heard his prospect objecting a moment later. Why did they all have to say to that? Wasn't there anyone who used just lots of honey?

"But honey is a food," he parried hastily. "You can use it in cooking. Why don't you try it in cookies, jellies, and candy? It'll keep cakes fresh for a month. It will make your—" But he'd lost the sale: he could see that.

Back in his car, Winters silently cursed his troubles. Suddenly he wished he was

a banker or a painter. At least one could forget about marketing then. He decided to go home.

"The production end of the business is all right," he assured himself aloud, as the antiquated coupe jolted along the little country highway. Hadn't he developed a system for running his hundred and fifty colonies with the utmost efficiency? Didn't he have a modern little honey house?

But marketing—ugh! What was the use of trying to sell to lame brains who thought honey was medicine, or to one who boasted of having had five pounds of the stuff for three years, and never using it? Why couldn't people learn the real uses of honey? They ought to be educated to—

Educate them! That was it! The public would never buy until it learned what honey was for. What was it that fellow had said at the state meeting—"Properly encouraging the increased consumption of honey will make the industry grow as it never grew before?" He was right. A wave of resolutions swept over Winters. He'd begin circulating instructive booklets; he'd send some money to that Honey Institute; he'd—he'd show the public honey wasn't just cough syrup.

Nan Winters was smoothing a tablecloth as he entered his home and closed the door behind him.

"You're early," said as she smiled.

"And tired." He kissed her absently. "Supper ready?"

The aroma of steak distracted his attention from the calculation of the day's business.

"Let's see," he figured. "Eleven five-pound pails, six pound jars, and three quart containers. Seventy pounds of honey in nine hours. Not so good."

"Supper's ready," Nan called from the kitchen.

"No, sir," Dan repeated as they ate. "People will never buy honey until they know how to use it. Education, that's the answer. And that is the only thing that will save—" The telephone interrupted.

"The more I think of it, the better I like it," Dan mused as he sat alone. He buttered a slice of bread. His wife was talking over the telephone. Her voice drifted through the open door:

"I'm afraid I don't know, Edith. You see, I never use it for anything like that. We only use honey for hot cakes."—Donald Dillon, Albuquerque, N. M.

HONEY PECAN ROLLS

These Rolls with Honey Caramel Pan Dressing Are Unusually Good

May I suggest that you use this recipe when you are entertaining? And pass it along generously—there will be plenty of requests for it. Use it for Rotarian dinners, church affairs, parties, bake sales and any time you may be called upon to donate goods for raising funds. It will result in splendid advertising for your product.

Don't they look good enough to eat?

2 eggs, 1 cup boiling potato water, 1 cake compressed yeast, ½ cup butter, ½ cup sugar, ½ teaspoonful salt, 1 tablespoonful of honey, 2 tablespoonfuls of warm water, 4 cups of sifted flour. Mix boiling potato water, butter, sugar and salt together and allow to cool to lukewarm. Soften the yeast in the warm water to which the honey has been added and add to the first mixture. Add the beaten eggs and stir in two cups of the sifted flour. Beat very thoroughly. Add the remaining two cups of sifted flour and stir well to blend but do not knead. Cover and keep in a warm room, allowing the dough to raise until double in bulk. Pat out on well floured board. Do not add any more flour. Spread with butter, sugar, cinnamon and chopped pecan nut meats. Roll and cut into slices one-half inch thick. Place these cut side down in a greased baking pan in which a generous coating of the pan dressing has been placed. Set in a warm place until very light. Bake in a 400-degree oven for twenty minutes. Remove from pans at once and leave upside down.

Pan Dressing for Rolls—2 cups brown sugar, 8 tablespoons butter, 4 tablespoons water, 4 tablespoons honey, ½ teaspoon maplein, ⅛ teaspoon salt, 1 cup pecan nut meats, not chopped. Blend and cook slightly. If this makes more than one cares to use with the rolls at one time it may be stored in the refrigerator or another cold place until needed.

This dough may be mixed and covered and kept in the refrigerator until wanted. This can be kept for a week and portions of dough used as wanted. This makes

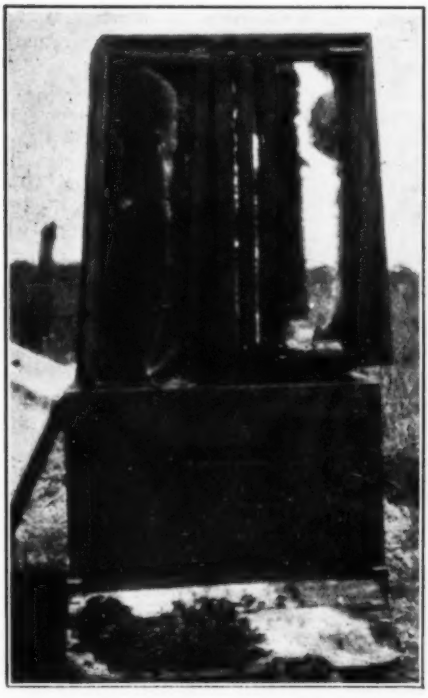
it most convenient for company and a steady supply of fresh rolls. The mixture is very, very soft, but do not let this mislead you into adding more flour. It will be a little difficult to roll and cut. But you will agree when you taste the resulting product that it is well worth the little extra care. If the knife is coated with flour each time a cut is made it will make the work easier. The rolls are very light, and due to the honey content remain amazingly light and fresh.—Mrs. Benj. Nielsen, Aurora, Nebraska.

DON'T NEGLECT YOUR BEES

Even a Very Populous Colony May Not Withstand Drouth and Neglect

This article is not written to put before the readers some new phase in beekeeping; but rather to show what neglect and unfavorable weather conditions will do to a strong colony of bees.

Last spring this colony was one of the strongest in my apiary. The hive was overflowing with young bees and two supers were filled with honey gathered in spring. Then came the drouth. This particular colony as well as all others brought in less and less nectar until they were gathering only enough to live on from day to day.



One result of neglecting colonies.

I was away from home last summer attending school. On one of my visits home I noticed honey running out of the entrance of this hive, and bees, which I was sure came from other hives, were helping themselves to the honey on the ground in front of the hive.

I constructed a temporary shade over the hive to check the terrific heat, and if possible to prevent the honey from running out of the entrance.

I was tempted to open the hive and investigate the trouble, but I knew that would almost surely starting robbing, so I decided to wait until a more appropriate time. There seemed to be no indication of robbing. I reduced the entrance to one-beeway, thinking that surely this strong colony could now hold its own against robber bees.

When I did finally open up the hive about two weeks later, I saw what the picture reveals. What had caused this giant colony to crumble? What had been responsible for all of the dead bees that were piled up in a thick layer on the bottomboard?

My conclusions as to the downfall of this colony can be traced directly to the extreme drouth accompanied by terrific heat. The queen had doubtless died and her death may have been due to the long drouth. Conditions were doubtless unfavorable for the bees to rear another queen from brood then in the combs.

This colony was without a queen and began to dwindle in strength. The other colonies soon learned of this, gradually overcoming the bees in this queenless hive and stole all of the honey, leaving the remaining bees to die.

So the story ends, with the loss of a good colony of bees and about 90 pounds of honey. A good motto is, "Always take care of your bees if you want them to take care of you."—Clarence J. Tontz, Stillwater, Oklahoma.

A Good Bee Meeting

The annual meeting of the New York State Honey Producers' Association was held at Syracuse on December 7 and 8.

The attendance was good and at all the sessions there was great interest in the program. This is not surprising for the principal speakers were Mr. Jas. I. Hambleton from Washington, and Dr. E. F. Phillips. Dr. Phillips showed the necessity of revising methods of selling honey because of certain changes going on in the distribution of our population. In the metropolitan district about New York City the foreign population is a very large factor. In the United States there are twenty-one million people that are on federal relief—twice the population of Canada. One family in every ten in the United States is on relief—in New York state alone, one in every five. Dr. Phillips stressed the need of examining these changes with the view of giving special attention to districts where almost the entire population is foreign.

Mr. Hambleton astonished the beekeepers when he outlined the widely diversified work of the Government Bee Culture Laboratory. It is safe to say that not one in the large audience realized the extent of these operations, at the laboratory in Washington and at the three field laboratories, as well.

A. C. Gould, New York's efficient inspector, told of the good progress made in bee inspection, also of the plans for the combined honey exhibit at the New York State Fair. Competitive honey exhibits are now discontinued, the entire effort being put in one gigantic exhibit. The next one will surpass the beautiful exhibit at the last fair which stood in a class by itself and attracted more attention than almost any other exhibit. Moving pictures will be made of the activities in connection with the exhibit at the next state fair.

At the election of officers, Leroy C. Keet, Watertown, New York, was elected president, and E. T. Cary, of Syracuse, re-elected secretary.—H. H. Root, Medina, Ohio.

SPINSTER JANE SAYS—

The thermometer is up to its old tricks of last winter. It has taken a drop too much, falling many degrees below zero, and as I look through the frosty window at my wintering-cases, I wonder if our experiment in packing our bees will work out successfully. Honey Boy, when at home, packed his with planer shavings. We used these several times until they became like sawdust, when we discarded them. This year we used chaff—chaff and dried leaves from that sweet clover crop. The smell should mean something to the bees. It does to humans, only how much, I came to realize after the skunk episode in our cellar.

Ours are quadruple wintering-cases, built for eight-frame hives. We are using ten-frame hives as much as possible, so it required a great deal more of the packing material.

At the entrance we made a sort of leading-in alley, then above that and all around we packed old woolen rags. In this way we run no chances of the bees smothering, and when the snow gets deep enough, we will heap it over the cases. That should keep them snug, no matter how low the mercury tumbles.

Our record book of the year is kept by the Head Master of Life's School. Each page represents a day; each year, a new term. No examinations are held for promotion. Each of us is promoted to a higher class or set back, as determined by the term's record. The Head Master is sole judge of our fitness, and the records remain with Him. With the ceasing of the years for us, we trust we may graduate and pass to a higher school.

What of our records as beekeepers? We have made mistakes, plenty of them, but have we profited by those mistakes? Have we exerted ourselves to the utmost to make good in our chosen profession? We are prone to quote to others, "Aim high!" or "Hitch your wagon to a star!" Do we do this ourselves? Success isn't always found in quantity, but rather in quality.

No one should have a higher ideal before him than the beekeeper. He wants to grow physically, morally, mentally, and socially, a man among men, in fact, the distinctive man. And why should he not attain a first rank in most of these attributes at least?

His work is mostly in the great out-of-doors, face to face with God, as revealed in the sunshine and beauty about him. Pure oxygen is pumped into his lungs, cleansing them. His brain must grow keen and active. He has time for thought as he works, and study is necessary at first hand to understand and make intelligent use of what he learns of the habits and eccentricities of his honeybees. As work develops his muscle, so will study and concentrated thinking develop his mind. All

must eventually lead him to the feet of the great Master, and thus he grows a better man because of his livingg close to nature's God. What an ideal life!

Never mind the past year. It is out of our hands completely. What lies before us is all important. Only the doting ancients are content to live in the past. Just keep tab as we go along and aim a little higher than last year.

Is our honesty up to par? Are we honest in our selling and marketing? Are we fair with our fellow beekeepers, or are we cutting prices, greedily reaching out for our brother's customers, too? Are our weights a little above standard, or that little below, that spells dishonesty? Is it quite right or even sporting to "kill the goose that laid us the golden egg?"—in other words, our bees? A man near us always advocates doing this, saying it is less expensive, and we guard against big losses. Perhaps it is only because I am a woman with a woman's natural sentiment, but it isn't conscientious, and I believe those practicing it will lose out.

To be successful to the highest degree in any business, we must love that business. The beekeeper must love his bees. It is as necessary as it is for a good stockman to love cattle. Why grumble over a few stings! Those stingers were given the honeybees just to get even with the wrong sort of beekeepers, and I trust they make use of them plentifully. The sting is to the bee what a sharp tongue is to a woman.

May the New Year bring improvements in the beekeeper himself, and in his methods of handling both his bees and his honey. Let his one big resolution be, "I resolve to be a better bee man this year, than ever before." That little improvement may revolutionize the bee industry.

Now to all, a happy, healthful New Year.—Spinster Jane.

COMMENTS ON CURRENT ITEMS

In reading the comments regarding the merits and demerits of the Caucasians, it is seldom that I come across a better summary of the virtues and the faults of the Caucasians than we find in the article by J. G. Jessup, in December Gleanings. Mr. Jessup seems to prefer them to any other race. I wonder why the majority of commercial beekeepers are sticking to the Italians. And yet there are those, who, like Mr. Jessup, seem to have the "knack" of handling them and prefer them, too.

The article by Professors Lothrop and Paine on the processing, including the filtration of honey, was very interesting. The equipment is no doubt perfect in regard to results. With us the honey goes into the tanks as fast as extracted, passing through strainers, and on the same day is run into 30-pound pails with a tight fitting close slip cover. Our honey is left on the hives until thoroughly ripened and there is very little scum to take off the top before it is run into the 30-pound containers. We are not troubled with cloudiness, in fact, the honey is quite clear before it is run into the 30's. By closing up the honey at once we retain the flavor and aroma. If left in the open tanks for even a few days much of the "bouquet" would escape. The 30's we like much better than the 60's for storage. We can check the day's production accurately.

With reference to cellar wintering, we have been through that, too. Your correspondent seems to have ideal conditions. There are very few bee cellars, even if specially constructed, that have not been abandoned for outdoor wintering. If your correspondent has his cellar in the same lot as his apiary, it might be less trouble and take less time to carry them in and out of the cellar than it would to pack and unpack them.

About moving bees a short distance. To move bees to another part of the apiary is not so easy. If it is not too much trouble move them a few feet each day. If absolutely necessary to remove them to a far part of the yard, lean a board as wide as the entire front of the hive on the ground, and reaching say 8 or 10 inches above the entrance and the top touching the front of the hive body. The bees will bump their heads against the obstruction and are very apt to fly out at the side and re-locate their hive. Even if moved a quarter of a mile, some of the bees will come back to the old stand. If moved one mile, we doubt if a single bee returns to the old location.

We have a number of 2-ounce screw cap jars handy. We give visitors a sample of our choicest mild flavored honey and ask them to stop again and give us their opinion of the honey. We are not surprised if they call again, and ask for a pail of "that delicious honey."—J. F. Dunn, Ridgway, Ontario.

Just News

EDITORS

The Kentucky Beekeepers' Association will meet at Lexington on January 22 for a one-day program. Lectures and demonstrations will be given on subjects of immediate importance to bee men.

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A beekeeping short course will be held at the University of Manitoba, Winnipeg, Manitoba, January 14 to 25. About 50 lectures and demonstrations will be given. Prof. A. V. Mitchener and L. T. Floyd are the chief speakers. A cordial welcome will be extended to all who can attend.

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The New Jersey Beekeepers' Association will hold its annual convention program Thursday, January 24, 1935, at Lodge Room, Moose Hall, 401 East State Street, Trenton, New Jersey. A goodly attendance is desired. W. J. Nolan, of the Bee Culture Laboratory, Washington, D. C., is one of the speakers.

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At a meeting of the officers of the Wisconsin Beekeepers' Association, held in September, 1934, it was unanimously voted to present C. D. Adams, an outstanding beekeeper of that state, a certificate of recognition for services rendered to Wisconsin beekeeping. Mr. Adams has rendered valuable and faithful service to the beekeeping industry and is worthy of this recognition.

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A three-day short course, to be held January 29, 30, and 31 of Farmers' Week at the Ohio State University is being sponsored by the extension service and the Ohio State Beekeepers' Association. Speakers, besides Ohio men who can give pertinent suggestions on local problems, will include Professor E. F. Phillips of Cornell University, and Dr. James I. Hambieton, Washington, D. C. Everyone is extended a cordial invitation to attend the short course.

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The Indiana Beekeepers' Conference, will be held during Agricultural Conference Week at Purdue University, Lafayette, Indiana, January 15, 16, and 17. Anyone interested in the program can receive a copy by writing to Department of Entomology. Speakers on the program will include W. E. Dunham, of Ohio State University; J. E. Starkey, State Bee Inspector, Indianapolis; B. E. Montgomery, of Purdue; Ross B. Scott, of LaGrange, Indiana, and Aneta Beadle of Purdue.

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Honey from the prairies of Saskatchewan made an impressive showing when three out of five entries secured prizes in the judging at the Imperial Fruit Show recently held at Leicester, England. This is the first time that Saskatchewan honey has been exhibited at this show, and it carried off first and second prizes for bottled liquid honey as well as second prize for a market case of honey in tins. The high quality of Saskatchewan honey established an enviable reputation in the British Isles last year when a carload of honey was forwarded to the London market. This shipment came by way of surprise to the importers, and their wholesale customers who were so favorably impressed by its clearness and quality that orders were placed for a larger quantity in 1934.—From Canada Week by Week.

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J. A. Redfield, of the Superior Honey Company, Idaho Falls, Idaho, writes as follows: "You will doubtless be interested in knowing that the honey crop throughout the intermountain country is being cleaned up very rapidly. If present movement continues there will be very little honey unsold within another 30 days. Idaho produced a normal crop and fully 75 per cent has already been marketed. The few remaining cars are in strong hands and most of the white quality is being held for a minimum price of 6 cents per pound. We understand that Utah is sold out even cleaner than Idaho. During our many years here we never have before seen so small a part of the crop left on hand at this date. We are wondering if there is enough honey in the land to take care of the demand until 1935 gives some new crop. Possibly the certain clean-up of all stocks will be good for the beekeeper and will tend to establish a more equitable price for the 1935 crop."

Editorials

Unoccupied Beekeeping Territory

Beekeeping in areas affected by the drouth has undergone some recent changes in management of apiaries. Crop failures have brought migratory beekeeping to the front. It is no longer necessary to lose an entire honey crop if prospects in any particular location are not promising. An apiary can be picked up and moved to better patsure. This necessitates having adequate facilities for moving bees quickly and safely.

Migratory beekeeping has brought with it the problem of overstocking or chiseling in on bee locations already occupied. If there is anything that makes a commercial beekeeper disgusted it is to have some other beekeeper squat a good-sized apiary down along side of his own. That makes prospects bad for both beekeepers.

There is plenty of good unoccupied bee pasturage available. Ask your state bee inspector about it. He will be glad to cooperate with you in helping to find desirable unoccupied beekeeping territory.

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New Bee Story in Geographic Magazine

We are glad to announce to our readers that there will be an illustrated article in colors on bees, by James I. Hambleton, in the Geographic Magazine in March or April next. The Senior Editor has had an opportunity to look over the drawings made in the office of the Bee Culture Laboratory. Without question these drawings are the finest that have ever before been produced. The very fact that the story is written by Hambleton means that the text will be conservative and accurate.

Our readers should put in advance orders for the bee article in the Geographic Magazine if they are not already subscribers to that wonderful publication that has an immense circulation.

This story will call attention to the value of honey, to the value of bees in pollination work, and in fact, it will be of great educational value, not only to the general public but to the beekeeper himself. There are too many people today who honestly believe that bees sting fruit, sting the blossoms, and that they are always in a towering rage; that they should not be kept in cities and towns, and worst of all that honey is often adulterated. This article will do much to dispel all these false notions.

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"The Old, Old Story"

In a large eastern city two department stores are located on opposite sides of a busy street. One of these stores made arrangements with a local honey producer whereby honey in five-pound pails could be retailed at 79 cents. Anticipating a satisfactory business, this store had an interesting, instructive and impressive display of honey in a window.

Shortly afterward the store on the other side of the street in large announcements offered honey at 49 cents for a five-pound pail!

The first store provided the publicity, the second store sold the honey.

Both the honey producers concerned lost out. The local producer lost because the store which he was counting on to sell his entire crop could move only a small portion of it. The producer who supplied the second store lost much of the labor that he put into packing the honey, for he seems to have sold in small packages and in small lots close to the price of bulk honey in carload lots. Whether he was ignorant, or just a poor salesman, he got no adequate return for his crop and at the same time, interfered badly with the balance of the honey market in general.

While there have been instances in which a bitter rival of a department store or large grocery has deliberately sold honey at a loss, in the great majority of cases, the store that cuts prices does not sell at a loss, the low prices being made possible by the producer.

Usually, a price-cutting honey producer does not attend bee meetings nor contribute to the support of the American Honey Institute. Ultimately he goes out

of business, but he leaves as the result of his mistakes, a whole line of blasted hopes.

If there were but one honey producer who had sold five-pound pails of honey in small lots near the price of bulk honey in carlots, it would not be so bad, but, unfortunately, nearly every state has its problem along these lines. It is the old, old story.

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Enzymes in Honey

Invertase is the enzyme which splits cane sugar (sucrose) while diastase splits starch. The usual name for an enzyme is the same as that of the sugar which it splits, with the exception that the ending "ose" for the sugar is changed to "ase" for the enzyme. According to this plan, the one which splits sucrose is sucrase, and the one which splits starch (amylose) is amylase. These two named are, however, exceptions to the general rule, because the names invertase and diastase are old and were in use prior to the formulation of the general rule.

Many biochemists now prefer the terms sucrase and amylase and quite disapprove of the terms invertase and diastase. If one uses the term "diastase" for the enzyme which splits cane sugar, he is wrong under British or American usage. The French use the term "diastase" as a synonym for the word "enzyme," and for the French this may be all right. It is all wrong in this country or in Britain. The German usage is exactly like ours also.

The human stomach has one set of enzymes, saliva, another set, various parts of the small intestine other sets, and their presence only starts the show of enzyme action. There are enzymes in the liver, the kidneys, the blood, muscles and everywhere that living cells exist, and each one or each set have special functions.

The enzyme, invertase, found both in the body of the bee and in honey, is not all used up in the ripening of the honey when first stored in the combs. This enzyme can and does continue to split any sucrose left not yet inverted into dextrose and levulose, or until the honey is fully ripe; but the enzyme, invertase, can not continue to work if the honey is overheated to a point that would kill the action of the invertase and right here it should be noted that a too high temperature on unripe honey will destroy the action of both the invertase and the diatase. A word of caution should be entered at this point: An unripe or thin honey (less than 12 pounds to the gallon) should never be sent to market

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Eternal Vigilance Price of Success

The enactment of a supplementary section to the Ohio Apiary Inspection Law in 1929 permitting the appropriation of funds by county officials has proven its real worth in the continuation of the vigorous campaign for the eradication of American foulbrood during the past two years. Through the efforts of energetic individuals backed by strong local organizations, officials in 36½ per cent of the counties in Ohio set aside funds which averaged slightly over $300 per county, amounts varying in accordance with the population.

The thorough and efficient operation of the inspectors during the previous seasons, which was demonstrated by a marked decline in American foulbrood, materially assisted in preventing any re-occurrences of bee diseases in those areas in which it was impossible to thoroughly inspect each apiary.

This more or less remarkable decline in American foulbrood throughout Ohio, as well as many localities entirely disease-free, is attributed largely to the policy of burning of infected materials by the inspectors. In addition, the operations of all county inspectors are carefully supervised, and when new men are appointed they are thoroughly trained in the many details of handling infected materials so that there is no possibility of an excuse for the inspector to spread disease through ignorance. The thoroughness and efficiency of an inspector is easily ascertained by the amount of disease found in areas covered the second season.

But for the fact that not only beekeepers but horticultural and other agricultural groups are becoming vitally interested in problems where the bee is an important factor, particularly in that of pollination, it would almost be an impossibility to obtain funds from county officials for bee disease eradication purposes. Just as soon as beekeepers succeed, either by demonstration or some other educational policy, to impress upon the communities the value of honeybees other than that of the production of honey, the problems in

bee disease eradication can easily be solved. Many fruit growers and farmers have learned by bitter experience that the absence of bees in their communities, due in many instances to the ravages of disease have materially reduced their incomes. These fruit growers and farmers do not hesitate to press their demands for securing adequate funds and the proper facilities necessary to carry on a campaign against American foulbrood to a satisfactory completion. Until we become more enlightened in bee disease problems it would be folly to modify the burning policy.

If given the proper support by all concerned, American foulbrood will not only be reduced to a minimum, but will be absolutely eradicated.

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New Bee Price Schedule

As stated in the first editorial of the December, 1934, Gleanings, the matter of bee and queen prices, and especially the desirability of establishing a price to dealers, would come up for consideration at the Valdosta meeting, and it did. As a matter of fact, this was one of the most important items of business transacted. See page 61 of this issue for complete details with reference to new schedule of minimum prices adopted by control committee, but not yet approved by the Secretary of Agriculture.

It is hoped that this new bee and queen price schedule, which provides for a 15 per cent dealer discount from the December 1 schedule, may be approved by the Secretary of Agriculture in the near future so that buyers and shippers may know definitely what to plan on for the coming season.

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Determining Honey Prices

We occasionally receive reports of so-called distress lots of honey being dumped on to the market at ridiculously low prices. Apparently the producers of this honey do not stop to consider the possible results of their actions. These honey producers lose money, other producers in the same locality may also lose money and the honey market, in that locality, for the time being at least, is thrown out of balance.

Can such price cutting be stopped? Yes, if beekeepers will stop to consider the folly of it, also the factors that govern honey prices. Beekeepers, in order to remain in business, must sell honey at a profit. The selling price should include three factors, viz., cost of production, cost of selling and margin of profit. Every item should be included that properly belongs in cost of production and cost of selling (and there are many). The margin of profit should be reasonable.

Beekeepers should keep careful records of production and selling costs. If these costs are kept down to the very minimum, where they properly belong, more profit will be realized, because the selling price will then be down to the minimum, and this should result in a greater volume of sales and quicker turn over. Theoretically at least, these three factors should establish a just selling price.

In the final analysis, however, the price of honey is governed by the old law of supply and demand. This law of supply and demand should not conflict with the three factors named but rather it should serve as a check for the beekeeper to determine whether or not his production and selling costs are down to the proper level, to allow a reasonable margin of profit.

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A Happy New Year

This may have become a more or less trite phrase but it does carry with it a worth while wish for the future. No one knows what 1935 will bring. Perhaps it is well we don't know.

The past year has been a most trying one for many beekeepers, especially those located in the drouth areas. It has certainly required faith and fortitude on the part of many beekeepers, to come through.

But "hope springs eternal in the human breast." Beekeepers are optimists. They have to be. To get beekeepers down it takes more than a few drouth years, even with sand storms and grasshoppers by the million.

Prospects for the season of 1935 are really encouraging. Rains have fallen over practically all of the country. Honey plants are in good condition. It looks as though the drouth may be broken. The 1934 honey crop is being cleaned up and the price of honey may go still higher.

In all sincerity the Gleanings staff unite in wishing our readers a happy and prosperous new year.

From North, East, West and South

NORTHERN CALIFORNIA.—This is being written on the steamship Yale, leaving San Francisco and sailing down the western coast of our United States to Los Angeles, which, strange as it may seem, is several miles inland, and this distance is soon covered by an electric train.

We are on our way to Santa Ana, where the California State Beekeepers' Association will hold its forty-fifth annal convention. The distance to Santa Ana from Los Angeles, is thirty-five miles, and the electric train makes it in a very few minutes.

Santa Ana is surrounded by miles and miles of orange groves. We can not have orange groves without bees and if we have bees we will have beekeepers, so they have both in Orange County—not just common beekeepers but the best educated and up-to-date beekeepers. So when the association is called to order there will be 200 or 300 beekeepers present. This will not be all of us, for some of our biggest producers are still outside. We want them in, and at this meeting some of our best minds are working on plans, which, if successful, will double our membership in 1935. This is brother Andrews' field, and he may tell us that he "covers the Pacific." This part of California would make any one write. If you are not already California-conscious, all you have to do is to visit this "Sunkist" empire.

President Lush and his committee have set a pace for committees that follow that will cause them to be busy people for a time at least. If there is any more to do, it would be difficult for a newcomer to point it out.

We have had some fine rains in the northern part of the state which are greatly appreciated by beekeepers and fruit growers.

Beekeepers Have Made Quite a Complete Clean-up of Their 1934 Crop.

The beekeepers have made quite a complete clean-up of their 1934 crop. Bees as a rule are in good condition and the beekeepers are looking forward to 1935 with renewed hopes. The depression has hit many of them pretty hard, but no class of farmers are coming out of it in better shape.

The fine work of Dr. J. E. Eckert, of the University of California for the beekeepers of the entire state is greatly appreciated by them. Then there is the work being done by the Pacific States Beekeeping Laboratory, which is producing results far beyond the expectation of the promoters.

H. M. Krebs does not confine himself entirely to police work but is just as much at home in educational lines. This faculty is making many friends for him.

Now as we finish this letter the Christmas trees along the streets are lighted and a great mixed chorus is singing Christmas carols from the top of the largest building and their voices may be heard by the help of loud speakers throughout the city.—C. W. Hartman, Oakland, California.

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SOUTHERN CALIFORNIA.—With a gold strike reported and another nice rain in southern California since our last letter things are coming along fine. While gold mining may not be strictly in line with honey production, nevertheless many a beekeeper is interested and some of them have mining claims that they hope will "pan out" some time. It is only one of the many things that help to make the country go.

Considerable feeding has been done, one concern having fed six tons of sugar. The larger operators at least are preparing for next year. Our experience has been that colonies fed after January 1 will, if they have good queens, build up for the early honey flow. Of course, it takes a longer continued course of feeding than it does when feed is given in the fall.

Several Hundred Beekeepers Meet at Santa Ana.

Later: The California State Beekeepers' convention is in session in Santa Ana, December 4, 5, and 6, and this is the evening of the second day. About two hundred men and women are in attendance from all parts of the state. Judging from the gen-

eral appearance of those present one would not think there was a depression on.

Poisoning of bees was discussed by Dr. E. C. Eckert, Assistant Professor of Agriculture, University of California. This subject brought out considerable discussion, especially from Imperial County beekeepers. Spraying by means of airplanes seemed to be the great bone of contention. Cattle that had been poisoned by alfalfa sprayed with arsenic had been paid for, while a judgment of some hundreds of dollars for killing of bees from arsenic poisoning had not been paid, so we understand. It seems that the dust was carried by the wind to plants for which it was not intended.

Mrs. Ethel P. Krebs, President of the Ladies' Auxiliary, gave a most interesting report. Some fifteen counties have active secretaries. Redlands reported that one store with special display sold as much honey during honey week as it did during the three previous months. Mr. Hartman, Secretary of the Association, said he had requests for high school talks and "Honey Helpings," and felt that people were becoming more and more interested in honey.

Mr. H. M. Krebs, in charge of apiary inspection, talked on use of apiary warning signs. After considerable discussion pro and con, a committee of five was appointed to look into, advise, and consider the question of moving bees over the public highways. This was brought about by the introduction of a resolution pertaining to the closing of bees when moving. It seems that there is considerable complaint of loose bees along the highway stinging people, and it is the opinion of many that if the beekeepers do not do something to abate this nuisance, the authorities will.

Mr. H. D. Whitaker of Escondido, gave a very interesting talk on "Feeding Starving Bees," a topic of much interest to many beekeepers.

Election of officers for next year resulted in T. N. Nicolaysen, President; A. K. Whidden, vice-president; Cary W. Hartman, Secretary-Treasurer; George J. Tripon, Chairman, Board of Managers.

All in all, it has been a very successful meeting. Honey prices have advanced about ½ cent per pound since our last letter. Demand is good. Wax in demand at around 18 cents.—L. L. Andrews, Corona, California.

ALABAMA.—Prices on packages and queens have been officially approved by the Secretary of Agriculture and now that this important part of the business is disposed of, both shippers and buyers can make their plans for the coming season. Most shippers favored a sliding scale of prices such as have prevailed for many years, but the authorities in Washington did not agree with the shippers there. Many co-operative associations have built up quite a business buying packages and queens for their members, and the shippers prefer to let these associations handle the business instead of handling it direct. The present scale of prices will mean a little more money for the shippers, but there will be so much more book work in handling these little orders that they will gain little by the change.

The demand was so great for packages in 1934 that buyers who waited till late to order could not get their bees when they wanted them. Some of these are evidently determined to get their bees on time in 1935 as orders began coming in early in November. Shippers will no doubt be better prepared to care for the demand next spring than they were last spring, but indications are now that the late buyers may be disappointed again.—J. M. Cutts, Montgomery, Alabama.

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MINNESOTA.—Moisture conditions in Minnesota, particularly in the southeastern third of the state, are much better than they were a year ago. Several inches of rain fell in the late fall, and this was followed by from twelve to eighteen inches of snow before the ground had frozen. This should lessen the possibility of a recurrence of dust storms next year, such as proved so disastrous last spring. Northern and western Minnesota did not receive as much rain or snow. Conditions generally are better than a year ago.

One of the Most Successful Meetings of Beekeepers on Record.

The recent annual convention of the Minnesota Beekeepers' Association was one of the most successful on record, in that practically everyone in attendance took a very active interest in the program and in all the proceedings. Professor Russell H. Kelty and Mr. James Hilbert of Michigan, and Professor J. A. Munro of North Dakota were present and added

greatly to the interest and value of the convention. The convention passed a resolution asking the Governor of Minnesota and the Mayors of St. Paul and Minneapolis to issue a proclamation concerning National Honey Week. All three issued such proclamation, and as a result honey sales in this general region took on a noticeable spurt.

The Association went on record as favoring a larger proportion for bee disease control, and for registration of beekeepers. The members agreed to support requests for this legislation by contacting their legislators in different parts of the state. They believe that a unified appeal from all parts of the state will bring the desired results. A large number of beekeepers also pledged themselves to support a better and bigger State Fair exhibit for next year.

One very pleasing feature of the convention was a demonstration of the use of honey in cooking by the wife of one of our progressive Minnesota beekeepers, Mrs. Earl W. Rood, of Mankato. The demonstration was handled in an able manner which would do credit to the teaching of Mrs. Jensen, and brought out a point which beekeepers would do well to consider, and that is that the splendid work of Mrs. Jensen and the American Honey Institute could be increased many fold if some of the thousands of women throughout the country who have heard and seen Mrs. Jensen conduct her extremely interesting demonstrations, could be induced to do something of the same kind whenever the opportunity arises. After the first few demonstrations these women would find that it is not nearly so difficult as they first imagined. Mrs. Rood has been called upon on a number of times and is giving some splendid publicity for honey.

The University of Minnesota has just built a fine bee cellar so that a more accurate comparison can be made between wintering in the cellar and out of doors.

A short course in beekeeping will be given during Farmers' and Homemakers' Week at University Farm, January 11 to 17, inclusive. A larger number than usual have indicated their desire to attend. Assisting in giving this course will be Professor J. A. Munro, State Entomologist of North Dakota; Dr. M. Haydak, Mr. N. J. Ellingson, and Mr. J. D. Hitchcock, University Farm.—M. C. Tanquary, St. Paul, Minnesota.

OKLAHOMA.—At this writing, December 6, the weather has taken a turn for the better. For the past several weeks we have been having wet, chilly weather. There is plenty of moisture in the ground.

A man who spent much time and effort improving beekeeping conditions in Oklahoma, H. H. Berry, state bee inspector, passed away at his home in Norman during the early part of November. He had served as inspector eight years and his tireless efforts in stamping out A. F. B. by burning, has prevented the ruination of many beekeepers. L. J. Austin, Norman, was appointed by Harry B. Cordell, president of the state board of agriculture to succeed H. H. Berry.

Local honey seems more prominent in the display windows than in the past; although there is a good deal of honey shipped in. According to the merchants honey is moving quite well. The containers seem to run mostly to glass, with fewer cans.

Beekeepers Are Learning Importance of an Abundance of Stores for Each Colony.

Because of the terrific drouth and the extremely mild fall, the old-timers here have been predicting a severe winter. It hasn't arrived as yet, but there is still plenty of time. If the weather conditions follow in the path of the past several years, we will have our winter weather in March. That sort of weather isn't very favorable for beekeeping. Warm winter weather causes bees to become active. They then consume more stores. In the early spring when they should be abundantly supplied with stores, colonies that were not well supplied with honey in the fall are just out of luck, as well as the careless beekeepers who own them.

A growing number of beekeepers are supplying their colonies with an abundance of stores in the fall.—Clarence J. Tontz, Stillwater, Oklahoma.

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SOUTHERN INDIANA. — Everything is quiet in the bee line at present. Bees as a rule are in good condition for winter. Late flowers bloomed freely and late planted buckwheat helped the bees to lay up an abundance of stores for winter. Practically every year I have noticed the late honey was dark and of pronounced flavor but have been unable to tell from

what it was made. It usually came with goldenrod and I laid the pronounced flavor to that plant. However, this last season there was a large field of buckwheat within six miles of our apiary and the bees laid in a good deal of the honey. The taste was familiar, and I now know that in years past the bees got buckwheat honey but from where I can not imagine, for there was not an acre of buckwheat anywhere within ten miles that I knew of. Some bees must have found a patch many miles away and gathered enough to flavor the honey.

I believe Alexander was right when he said 700 colonies did as well in one place as 50 colonies. Bees will go great distances when necessary to get nectar. In Dr. Eckert's report he shows where bees always did better half a mile from the field than they did right in the field and some years they did as well seven miles away as they did right in the field, and that bees worked well at 8½ miles. Had it been necessary they probably would have worked much farther. It seems strange that bees will gather nectar at such great distances and yet will not take honey more than a mile and a half. I presume this is nature's way of preventing too great a spread of foulbrood, for if bees would rob at, say, 10 miles' distance, disease would eradicate the bees. Dr. Eckert has done some wonderful work along this line. What we need is more work of this sort so we may know just what bees will do and not what we think they ought to do.

I have had many people say to me who believed that 50 colonies were all that could be put in one yard, "It stands to reason bees can gather more nectar going half a mile than they can where they have to go a mile." My reply has been, "I do not care anything about what stands to reason; what I want to know is just what the bees will do." Many times the bees will seem to go against all human reasoning. When I was in the government service under Dr. Phillips, I used to use the expression, "Bees think this," or "Bees think that." Dr. Phillips used to call me down and once he said to me, "Remember, bees do not think as we do." I replied, "You are right, Doctor, in saying bees do not think as you and I do, and may be they are all the better off for that." I believe most of us make the mistake of believing all the bees have to do is to gather honey. It is apparent that the main office of the bee is to fertilize flowers and the honey they gather is merely to keep them alive. This being the case, they will not confine all their attention to flowers close to their hive, for it would be a waste of time to visit the same flowers hundreds of times and leave those at a distance unfertilized. By covering a large area they are enabled to fertilize more blossoms.—Jay Smith, Vincennes, Indiana.

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SOUTH DAKOTA.—The state is shimmering in a thick blanket of snow, and with the weather around the zero mark, the principal activity among beekeepers is chinning around the fireside on the prospects for this new year. The prospects have improved so much as to make most beekeepers feel a bit chipper. A big crop again would be a blessing—what matter if the quantity would make it a little harder to sell. Nobody ever went broke with a few hundred pounds or cans on hand that could not be immediately disposed of. Honey has undoubtedly better keeping qualities than even money.

There is scarcely any honey left in this part of the state, most of it having been sold through retail channels. Due to the fact that bees could be moved to favorable localities it turned out the honey crop was the principal source of income for many who combine beekeeping with agriculture. The upshot of the situation is that these men are planning to go in heavier than ever in bees. One of these organizations is busily engaged even now setting up newly purchased equipment for the coming season. Others are planning considerable purchases of package bees.

The principle worry at the time seems to be the shortage of stores in colonies run for extracted, a worry which the comb producers do not share. It is a positive fact that considerable feeding will have to be done early in spring to save many colonies.

Around here, where considerable experimenting has been done the past two years with top entrances, more bees were packed that way this winter than ever before. Top-entrance packing is a matter of absolute logic, these beekeepers say. Something definite in the method of wintering will undoubtedly prove itself in the course of time.

No, things are not all what they used to be, but they never get so bad but people and cows can arise to the emergency. For instance, if Jay Smith's cow lived in South Dakota she would probably eat the new plant "Crotolaria" with delighted gusto. (Jay Smith in North, East, West, South, November issue.) Indeed, if she had to live here all winter, be assured she would entirely forget the objectional practice of "spitting." Many South Dakota cows are happy to subsist on a diet of Russian thistles, a bit thorny, but nary a one spits.—J. F. Norgren, Junius, South Dakota.

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WESTERN NEW YORK.—I have just returned from attending the winter convention of the Empire State Honey Producers' Association at Syracuse. Although I have been attending these conventions pretty regularly for about 20 years, this meeting impressed me as being one of the most instructive and interesting ever held. The speakers included James I. Hambleton, Dr. Phillips, Geo. Rea, H. H. Root and A. C. Gould. All these men seemed to be at their very best and the attention was good during all of the sessions. The attendance was not so large as usual, about 75, but was representative of all parts of the state.

New York State Bee Meeting Was One of the Best Ever Held.

Figures and statistics are not usually very interesting, but Chief Inspector A. C. Gould has been keeping pretty accurate records and doing some careful figuring. His report indicated that 44 per cent of New York State bees were lost last winter and that this loss has been about half made up. About 75 per cent as many bees have gone into winter quarters this fall as last. He estimates that the number of colonies has decreased about 45 per cent during the past 30 years, or an average of about 1½ per cent per year and that the number of beekeepers is decreasing about 3 per cent a year. These figures were a surprise to me.

There was considerable discussion of the Honey Institute, led by Mr. Root. One man present gave a check for $25.00 as a subscription.

There has been more confusion on honey prices than was anticipated. One cause for this was the operation of a certain honey company that bought large amounts of honey and usually paid but little down to the producer and in some cases sold honey put up in 5-pound pails to the trade at prices about 2 cents per pound less than they had agreed to pay the producer or that they had bought it for. I further understand that the head of this outfit is now serving a term of from 2½ to 3 years in state's prison.

Buckwheat and fall honey seems to be well cleaned up. There are still a few lots of nice white honey being offered at from 7 to 8 cents per pound wholesale.

It is just about zero here tonight, December 9, with a light covering of snow. —H. M. Myers, Ransomville, N. Y.

[See also report by H. H. Root, p. 31.]

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NORTH CAROLINA.—The year 1934 has been very pleasing to most North Carolina beekeepers. Although the harvest for spring and summer flows was only about 80 per cent of a normal yield, the honey was good quality and the bulk of it has been marketed at fairly good prices. The fall flow has generally been good. Some report fifty to sixty pounds surplus from fall flowers. Some sections do not have fall flows. Colonies are in good condition for winter both in regard to stores and colony strength.

In some eastern counties the spring and early summer flow is exceedingly good but practically no honey is gathered after July 1. Some extensive beekeepers have such locations. Beekeepers in those localities have greatest difficulty in having their colonies properly prepared for winter. Food chambers filled with honey at the end of the summer flow are often consumed in brood-rearing long before the beginning of winter. This is especially true when Italian colonies have young queens introduced about the close of the summer flow. In those localities black bees are preferred by some leading beekeepers because of their tendency to let up on brood-rearing after the summer flow is ended. Now European foulbrood and parafoulbrood have invaded some of those localities with disastrous results to some of the smaller beekeepers. Some of the extensive beekeepers had heavy losses during the spring and early summer before they could get more resistant races established. One beekeeper operating several hundred colonies lost over 50 per cent of

the bees. In fact, about all he saved was two Italian apiaries which proved to be very resistant and one apiary of 85 colonies of black bees that escaped the infection. I might mention the fact that some colonies of black bees showed no signs of the disease and stored good crops of honey while all the colonies around them either died from the infection or had to be treated. What some of those beekeepers would like to have would be a strain or race of bees that would resist those diseases and at the same time be moderate in brood-rearing after the summer flow. Some of them introduced Caucasian queens in a limited way to see how they will cope with the diseases next spring.

The weather has been very mild up to this time, December 8, with abundance of rainfall. Honey producing plants are in normal condition and prospects in general are favorable for the 1935 season.—C. L. Sams, Raleigh, North Carolina.

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MANITOBA.—As we near the Christmas season we are still wondering what has happened to our winter. There has been only one day so far when the thermometer has been near zero. Bees were placed in winter quarters the last week in November after a wonderful flight day on the 23rd.

Retail Honey Sales Have Been Good.

There was a rush of honey to market in small lots on the last week in October. This was in anticipation of winter and was expected. Many country people make a motor trip to the cities before winter and bring honey in with them. Since then and during the whole month of November sales in a wholesale way have been pretty nearly at a standstill but retail sales have been good. The stocks that are held are mostly in the hands of producers who expect to hold until after the first of the year.

We have been working on crop reports for the past two weeks and have never had so many reports from beginners who had no crop to harvest. This was due in many cases to queenlessness, in others to late deliveries of packages and also to ignorance of the elementary rules of handling.

One man writes: "I ordered my packages for April and received them on June 15. Part of them were half dead upon arrival and some queens were also dead. I hived them then and after the queenright ones had some brood I removed some brood and gave it to the queenless ones in order that they might rear queens." He wondered why he had no honey to extract. Next spring I suppose he will wonder why they did not live through the winter.

A number of beekeepers in the dry part of the province are debating now whether to pay for the containers they bought on credit or the package bees they also bought on credit. There is not cash enough to do both.

The new prices on queens for next year lead me to think that we can be prepared for more and more of these failures because the high price of queens makes these beginners hesitate to buy and it also makes the shippers hesitate to replace. There is no time to hesitate when package bees are queenless.

The new rules prohibiting the return of empty packages has brought a smile to the faces of the express people here and the result will be that few package bees will come in by truck next year. On a visit to the express office here last week it was the first announcement that the manager made when I came in. He had the order framed on the wall beside his desk.—L. T. Floyd, Winnipeg, Manitoba.

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TEXAS.—The weather during November induced the bees to produce a large amount of brood and because of rain and cloudy weather the bees put up no extra stores. This means that in many localities a considerable amount of stores was used in the rearing of brood. Broomweed, yellow top, white brush, and numerous other late blooming plants did their part but the bees could not take advantage of the nectar flow because of the weather. Beekeepers should care for their colonies this winter and if equalization does not supply sufficient stores sugar syrup should be fed. With the rainfall which has been very general over much of Texas, there is little doubt but what a normal if not a large crop of honey will be made next spring. This one thing is certain: If the beekeeper is not ready ahead of time he can not expect a honey crop.

Mr. Charles Engle, the well known beekeeper of the north central states, visited the Apicultural Research Laboratory ear-

ly in the month. Mr. Engle has the right idea of migratory beekeeping as he does the migrating and never carries the bees but one way. He finds that he can put his bees in winter quarters in the North and then come to the South. Here during late fall he can buy bees and with little expense in early spring build them up. Then at the right time he converts his purchases into pound packages which he himself can transfer by truck to his yards in the North in about one-half of the time which is required by train. Thus he acquires his package bees and some queens at a very much lower cost than if he depended on purchasing bees and having them delivered to him in the North. From experiments carried on by the beekeepers themselves it is doubtful if it will pay to move bees from the North to the South with the idea of taking them back again in the spring. Often the warm winter of the South is as detrimental to beekeeping as the below zero winters of the North.—H. B. Parks, San Antonio, Texas.

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COLORADO.—May the New Year be a happy one to all. May we be happy in our good health, our friendships, our families and our ability to serve mankind. May we also receive our share of the good things of life.

Our bees are in first class condition for this season of the year. Winter has scarcely visited us as yet, even though one or two nights have hovered near the zero mark. The days have been warm and the bees have had frequent flights, and today, December 6, is no exception. It is sunny and warm; an ideal autumn day. It is one of those dozens of beautiful days we have in the fall, that are a delight to any outdoor man and in particular to a beekeeper. It is perfect weather to finish up those odds and ends of outdoor work, repairing fences, reorganizing the yards in orderly fashion, straightening up hives on more solid foundations, replacing equipment in need of repair and a dozen other odd jobs.

Our Greatest Need Is for About Four or Five Feet of Wet Snow on the Plains.

The moisture situation has not improved materially in Colorado except that there is generally a greater depth of snow in the mountains. Our greatest need is for about four or five feet of heavy wet snow on the plains in the farming sections. Water used for irrigation purposes is of little or no value in the average growth of sweet clover. This crop, growing wild, is of inestimable value to the beekeeper, but sweet clover is absolutely dependent on August rains for its start. In 1934 there was no such rain in this section and consequently there was little or no growth of sweet clover this fall. In this respect, it will be well for the beekeepers in this section to have their bees in shape to secure every possible drop of nectar from alfalfa if and when there is enough irrigation water to make a good growth and bloom in 1935.—R. G. Richmond, Fort Collins, Colorado.

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KANSAS.—The year 1934 will be known in history as the year of the most severe drouth and crop failure on record in the state of Kansas. This is the first time the northwestern part of Kansas has had a honey crop failure since beekeeping has been practiced as an industry in that region. What little honey was produced this year was in a very small localized area in the northwestern part of Doniphan County. Southeastern Kansas had the shortest crop of honey that has been produced in many years.

At the present time indications are decidedly improved over those of a year ago. Perhaps the weather has turned and the cycle of more moist conditions will prevail in the future. The prospects for 1935 in the eastern third of Kansas look rather bright for a honey crop during the coming season. The moisture conditions are decidedly improved, and cracks in the soil at Manhattan have been closed for the first time in two years by much needed rain. Rainfall in November was above normal, and at the end of the month the weather turned cold and several snow storms occurred in the eastern part of the state. Evaporation conditions have been low due to the fact that there have been no strong winds and that the surface soil has been frozen.

The optimism of the beekeepers of the state is good. The majority of the larger beekeepers have maintained their apiaries at full colony strength during the adverse

conditions of the past season, and at present have enough food with the colonies to carry them into the spring, or until the next major honey flow. Some of these larger beekeepers plan to feed extensively in the spring. Many of these beekeepers, if conditions are right, plan to replace their losses and make increase by colony division and requeening during the month of April. Other bekeepers will depend upon natural swarms to make their increase, which will come during the month of May and early June.

Plans are being made for a beekeepers' program at the Kansas State College during Farm and Home Week, which will be from February 5 to 8, 1935. A one-day beekeepers' program is planned for February 7. Topics of interest to beekeepers will be presented at this meeting.—R. L. Parker, Manhattan, Kansas.

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BRITISH COLUMBIA.—Honey is now all safely gathered in and the result of the beekeeper's year definitely tabulated as far as is possible with the returns available. Okanagan, Shuswap and Thompson Valleys head the list for quantity. Over 6000 hives gave a crop of 610,050 pounds of honey, making over 100 pounds average per colony. Next on the list comes the Kootenays with 86½ pounds. Then the Lower Fraser with over 61 pounds; Central Interior, 50 pounds; Upper Fraser and Chilliwack with 43½; and Vancouver Island and adjacent islands with 41 pounds. Greater Vancouver ran a close seventh with 39½ pounds.

The estimated crop altogether of British Columbia is over one and a half million pounds, but as this figure is compiled from information actually on hand, it naturally follows that it would be considerably augmented if every individual beekeeper sent in his or her report. Unfortunately the beekeepers in one part of the province have no knowledge of those in other parts, and it is only when the annual estimate is compiled that one knows the "high lights." The only information we have is gleaned from occasional articles in the daily papers, one here and one there.

Vancouver Island is primarily a land of small farms. From 5 to 20 acre poultry farms, the same sized fruit farms, cows, goats, and rabbits. But with the exception of the largest poultry and dairy farms which are highly developed and well established, the large number of others vary in their occupations, due to market prices and demand, etc. But the beekeeper who starts with perhaps one or two hives of bees very rarely gives that up, but nearly always goes on increasing his apiary and his knowledge, firing his neighbor with his enthusiasm for bees and gradually the whole neighborhood. In this way beekeeping is increasing by leaps and bounds, and in my own district alone I am constantly being asked for information and help with newly acquired colonies. So it seems that everything comes and goes, but when beekeeping comes it stays.—F. A. Greenwood, Victoria, B. C.

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NEBRASKA.—Gentle fall rains that soaked into the soil and the prolonged Indian summer following the rains did much to revive parched and dried pastures in our state. Alfalfa and clover plants were greatly benefited, too. Killing frost came to our locality on October 27, which is two to three weeks later than usual. This gave the bees an opportunity to take advantage of a scant flow of nectar.

We do not want an open winter again this year. Though we much prefer our moisture without the cold and hardships, we usually can not receive one without the other. Even the unfortunates pinched by winter's cold would be better off in the long run if we have a real winter with plenty of moisture and we can get back to somewhere near normal again.

Demand for honey continues unusually brisk with advance prices. And while we want and need higher prices than that of the past few years, it is hoped that prices will not go too unreasonably high. For when that occurs people turn to substitutes and much of our hard-fought battle to increase honey consumption may be wasted.

It is interesting and pleasing to note how honey is being featured in leading magazines, cooking schools and newspapers throughout the country. In a December issue of one leading woman's magazine, two recipes out of twenty-nine candy recipes featured honey—a splendid average and a nice boost for honey.

We understand that some of the bakers are using a product known as "Honey

Molasses," which is nothing more or less than pure honey heated at 115 degrees for 72 hours or longer.

Our state beekeepers' meeting will be held at Lincoln on January 8 and 9. Mr. O. S. Bare has charge of the program preparation and a fine, instructive program is promised those attending.

The attitude of grocers in general has greatly changed in regard to honey. Not so many years ago grocers were reluctant to give space to honey that the beekeeper was willing to leave on consignment—it moved too slowly and the grocers had little faith in it. Today these same merchants will actually telephone or come for honey if the stock becomes low. They display prominently now instead of crowding it off underneath the counter. Some even go so far as to use electricity in the displaying and these are the merchants who sell the most.

We sell much more honey upon doctors' recommendations than in past years. If more doctors will really accept honey and prescribe it for their patients it will do wonders for the consumption of honey. We beekeepers would have to get busy. And the trend seems to be heading that way. —Benj. Nielsen, Aurora, Nebraska.

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OREGON.—I believe that I am not overly enthusiastic when I say that the recent meeting of the Oregon State Beekeepers' Association, held in Portland, November 9 and 10, was one of the best we have had in recent years. There were nearly 50 beekeepers and their friends registered at the meeting, which probably is the largest attendance we have had for nearly five years.

In addition to the usual routine of business, several things came up for consideration which, I believe, are worthy of special mention. One of these was the honey exhibit at the Pacific International Livestock Show and at the State Fair. There was a feeling among the beekeepers present that our exhibits in the last year or two have not been up to the high standard attained a few years ago. It was the feeling of the committee reporting that a much closer co-operation was necessary between the managers of the fairs and the Department of Fairs and Exhibits of the State Beekeepers' Association. We believe that our Department of Fairs and Exhibits will be able to work out these problems, but we need the full co-operation of the beekeepers of the state in maintaining a good exhibit, as well as the full co-operation of the fair management.

The matter of a national or state code for honey was considered briefly but it seemed to be the consensus of the meeting that nothing at the present could be done along that line.

We were pleased to have Mr. Frank E. Todd, of the Pacific States Bee Culture Laboratory at Davis, California, with us. Mr. Todd reviewed the past work of this experiment station and mentioned some of the projects which they anticipate taking up in the future.

The recent honey cost survey which was carried on jointly by the Oregon Experiment Station and the Federal Station at Davis, California, is probably the most exhaustive study of honey costs that has ever been made. Although these cost studies have not yet appeared in final bulletin form, the preliminary reports which have gone out have attracted nation-wide attention. It is hoped that the final bulletin will be available this coming spring. Mr. Todd also called attention to the outstanding work done jointly between the Federal Station at Davis and the California Experiment Station on the economic phases of the bee industry and marketing of honey. This work has also attracted nation-wide attention.

After an open discussion of possible future projects to be undertaken by the Oregon State Experiment Station and the Federal Station at Davis, it seemed to be the consensus of opinion that a rather exhaustive study of the honey flora of the state, involving also a study of pollinization and spray poisoning, should be undertaken.

Probably the outstanding and most definite progressive step taken was the movement to establish honey grades and standard containers. Our state law provides the necessary machinery whereby the State Department of Agriculture may, after a public hearing, establish such grades and standards. As an outcome of our association meeting, the State Department of Agriculture called such a hearing at 10 o'clock Saturday, December 1, Portland, Oregon, to which everyone interested in the marketing of honey was invited.

The officers of the Oregon State Beekeepers' Association elected for the ensuing year were: President, George W. Neckles, Talent; vice-president, S. D. Williams, Portland; secretary-treasurer, H. A.

Scullen, Corvallis. The next annual meeting will be held at Medford.

Abundant rains during the month of November have assured us of an ample supply of snow in the mountains, which means plenty of moisture for next year. Bees have apparently gone into the winter in good condition, although rainy weather has prevented the west-side beekeepers from getting their bees properly prepared for winter. Honey seems to be moving in a fair way with the probability that there will be little or none left.—H. A. Scullen, Corvallis, Oregon.

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ONTARIO.—The month of November here in Ontario was milder than usual, much milder than the same period a year ago. Bees had a good flight on the 23rd of that month. A year ago our bees did not fly from October 20 until late the following March. The last week of November was wet and mild with little sunshine, but December has been colder with three days of zero weather to date, December 11. We have had practically no snow locally as yet, but yesterday when on a hunting trip near Lake Erie, we were surprised to find about six inches of snow in a locality 50 miles south of us.

The annual meeting of the Ontario Beekeepers' Association was held during the last three days of November and was well attended. Interest was keen throughout the sessions and as predicted in the last issue of this journal, the honey container question was a live issue. Our association members were quite generally in favor of reducing the five-pound and two-and-a-half-pound gross weight pails to four pounds and two pounds respectively, net weight. Many wished to increase the tenpound gross weight pail to ten pounds net, and these ideas were incorporated in a resolution asking the federal government to bring in legislation making these three sizes of honey containers standard. If that is done, all will have to use these containers regardless of their own personal views or wishes. Personally I prefer to leave containers as they are, but in view of the fact that chain stores are now largely featuring these pails of reduced poundage, the majority felt that for business reasons we had better fall in line with the cooperative and other honey handlers who are using these sizes.

If I am correct, the ten-pound gross weight pail has been reduced by these same firms to eight pounds net weight, and it seems to me that while they were reducing the two smaller sized containers, that for the sake of uniformity we should have done likewise and not have asked for a ten-pound net weight pail. Of course, we are not sure that these changes asked for will be granted in the immediate future. The present government has but one more session to be held before a general election. This session is sure to be loaded up with urgent business. I will make the guess that nothing will be done for a year at least. Possibly by that time some minor suggestions may be considered in the way of an amendment to the resolution as passed at the meeting this year.

As usual the disease question was a live issue. Owing to action of the new government in discharging all inspectors last fall, possibly the question was a bit more acute than it has been for many years.

The Hon. Duncan Marshall, Minister of Agriculture for the province, addressed the meeting at an evening session, and I think that his short talk quite dispelled all the fearsome rumors that had been circulated, to the effect that the industry would be left without protection in way of inspectors and that the government looked upon beekeeping as a small thing not worthy of consideration. Briefly the Minister's remarks might be paraphrased as follows: "As a reasonable man, I am prepared to meet a committee of reasonable men appointed by your association and with them discuss all matters pertaining to the needs of your industry. And I am prepared as a reasonable man dealing with reasonable people to grant all the protections and assistance to your industry than can reasonably be expected." This promise made before a large gathering of representative beekeepers is about as much as we could expect or ask for, so criticism is now out of order, at least until we see how this promise will be carried out.

Possibly too much noise was heard about the damage to beekeeping that was supposed to have been done by the dismissal of inspectors last fall or late summer. As a matter of fact, about all funds available for the season had been used up and while some cases of foulbrood may have been neglected by reason of there being no inspectors, yet that always happens more or less even when inspectors are on the job.—J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

A Rubber-Tired Wheelbarrow

The accompanying picture of my home apiary shows my rubber-tired wheelbarrow. I got this idea from January, 1933, number of Gleanings. The wheel is an old Ford wheel with tire. A dozen bolts hold

The rubber tire prevents jolting and lessens danger of being stung while moving bees.

it together and yet it is rigid, because of the iron braces. A heavy load can be carried with ease, because it is well balanced. When hauling a hive of bees without the use of an entrance screen there is not much danger of getting stung. The soft cushion of the pneumatic tire absorbs all rough places in a bee yard. I also find it handy for general use. If you are interested in making one, read page 559, September, 1932, Gleanings.—Frank Derrenbacker, Jr., Wealthia, Virginia.

Loss of Virgin Queens

Our worst trouble this past season was losing queens. We did not know the colonies were queenless until it was too late to requeen, so all we could do was to unite the queenless colonies with queenright colonies. It appeared at first as though the birds took the virgin queens when they went on their mating trip, but I wonder if the loss of the queens was not due to the intense heat.—Miss Ethel Strayer, St. Paul, Nebraska.

Wanted—Expert Bee Breeders

On page 607 of the October Gleanings is a very interesting article by R. O. Dodge of Portland, Oregon, on the subject of Cyprian bees and their production as compared with others. Mr. Dodge suggests that it would be possible to produce a very superior strain of bees by the proper crossing of Cyprians with some other race of bees and I agree with him except that I do not believe that a bee can be produced that will be superior in all climates, all localities and in all kinds of flora. We breed cattle, hogs, chickens, grains, fruit, vegetables, etc., for special purposes and for certain characteristics and why not bees? The attention of bee breeders seems to be centered on Italians, with particular stress on bands, color, gentleness, beauty, etc., with an occasional breeder who claims large honey production for his bees. Is it possible to breed a strain of bees, of any race, superior in honey gathering, that will fit all localities, with the many variations of climate and flora? A bee that will thrive and give a big honey production in the plains of Kansas may be a failure in the mountains of east Tennessee. The climate and flora in one section of our great country is very different than it is in other sections. Is it not reasonable to assume that certain races or strains of bees are better adapted to certain conditions of climate and flora and will be more productive in certain sections than in others? When I was a youngster the old settlers in our mountains kept the old black strain of bees in sections of "hollow gums," and it was astonishing to see the big tubs of honey sometimes produced by these quarrelsome, fighting black bees, in their crude equipment. The Italians have many good qualities but do they produce as much honey as the blacks? There is a big field for the breeder who will dig into this problem and try to produce special strains of bees to fit special conditions of climate and flora, and especially to produce a bee that is ahead of all other breeds in bringing

home the honey.—E. F. Buffat, Knoxville, Tennessee.

Another Honey-Fed Baby

Our family doctor not knowing the great value of honey, recommended Karo syrup for our 8¾-pound baby boy. The baby was bottle fed. We told him we believed honey would be superior to Karo syrup. He then advised us to use honey. Our formula was: One pint of water, one

A happy, healthy, honey-fed child.

pint of rich goat's milk, 1½ tablespoons of extracted clover honey—all brought to a good boil. At the end of three months the baby weighed 17 pounds. At this age we discontinued boiling the milk, but continued the use of honey, and used less water and more milk. This picture was taken at the age of 6 months when he weighed 23 lbs. At the end of 12 months he weighed 26½ pounds. Owing to the fact that honey is a mild laxative, at times it was necessary for us to increase the quantity of honey, and at other times we decreased the amount. In case one finds this formula too much of a laxative, it would be advisable to use less honey. By the appearance of this picture, one can judge the success of honey as a baby food.—John Burghardt, Grand Island, Nebraska.

No Winter Losses in Ten Years

I have wintered my bees out of doors the past ten years, and have not lost a colony in that time. My frames are 10 inches by 16 inches inside, 10-frame hives. Fifty pounds net of honey gives them plenty to carry them through winter and spring. When packing them for winter I use burlap cloth over the frames, place an empty hive body on top, and put a bag of dry leaves or straw in the upper hive, then the cover. We have acres of goldenrod and asters that keep up brood rearing until late fall. Colonies go into winter with plenty of young bees. Hives are sheltered from west and northwest winds by a henhouse.—C. M. Woolver, Richfield Springs, New York.

Glass Gate for Filling Jars

When jars are to be filled with honey from a five-gallon can a piece of plate glass, such as a section of a discarded windshield, cut four or five inches square, serves well. When using, place the glass

The glass gate in use, held over the opening in the can and slid up or down as desired to regulate the flow. Rounded edge of the glass should be at the bottom.

over the opening and hold it in place with the right hand while the can is laid over on its side with the left. Then simply slide the glass up to fill the jar, and down to shut off the flow. The honey should be at

The glass gate, shown in the operator's left hand, ready for use.

ordinary temperature, not hot, as that makes it too thin. Have the jars close at hand ready for use. The rounded edge of the glass should be used.—W. H. Hull, Vienna, Virginia.

Brood Disease in Great Britain

I know that it is customary in the United States not to regard very seriously beekeeping activities in this country, and to some extent this may be justified, for conditions of climate and flora, to say nothing of density of population, can never allow honey production on the vast scale practiced in North America.

At the same time production is growing steadily, marketing is emerging from the dark ages, and prime home-produced honey, particularly that of a speciality nature, commands a price calculated to make the mouth of an overseas producer water freely.

We have, however, been up against difficulties engendered by disease, which have greatly hampered the development of the industry. Of these, Acarine (Isle of Wight disease) which swept the country for 25 years, must be given first place, for it rendered beekeeping practically impossible in many districts until the discovery of the cure which bears the name of its author, Mr. Frow. That disease is, thanks to him, no longer a menace and in careful hands the cure is specific.

We are now facing the problem of brood disease which has proved with us very difficult of elimination, owing to the number of small, unregistered and uncontrolled producers, many of whom still use the old form of skep or soap box hive.

The Ministry of Agriculture and the beekeepers themselves have jointly provided a fund to cover three years' research into the subject, and the resources of the Rothamsted Experimental Station have been placed at the disposal of the bacteriologist appointed to conduct the investigation into the incidence, causal agents and control of brood diseases.

The research is in the hands of Dr. H. L. A. Tarr, Ph.D., of the British Columbia and McGill Universities, who has for some time past been carrying out biochemical investigations under Sir F. E. Hopkins at Cambridge, and his work will deserve the utmost good will of beekeepers on both sides of the Atlantic.

The first fruits of the investigation now appear in the form of a pamphlet transcribing the papers read at a conference at Rothamsted at which most of the authorities on the subject in these Islands were present. The papers review our present state of knowledge from a variety of angles and include a historical survey of the subject and a report on the application of legislation to brood disease as applied in Switzerland.

The discussion following the papers at the conference seemed to indicate that there is still a considerable tendency to prefer "treatment" to complete elimination of the infection by fire, and possibly this may account for the continued growth of brood disease here.—Charles Prior, Chesham Bucks, England.

TO ALL SHIPPERS AND LICENSEES UNDER THE MARKETING AGREEMENT AND LICENSE FOR SHIPPERS OF PACKAGE BEES AND QUEENS PRODUCED IN THE UNITED STATES:

This communication is an official notice to you of a schedule of minimum prices for package bees, nuclei and queens now effective, and it is suggested that you read carefully this notice and the attached Exhibit A, said schedule of prices.

You are hereby informed that Section I of Article III of the aforesaid Marketing Agreement and Section 1 of Article II of the aforesaid License provide that "the Control Committee shall establish, subject to the approval of the Secretary, a schedule of prices which shall be the minimum prices at which all shippers and licensees shall sell, or offer for sale, package bees, nuclei and/or queens following the effective date thereof, and said schedule of prices shall remain in effect until altered, amended or cancelled by the Secretary or by the Committee with the approval of the Secretary."

You are also informed that on November 2, 1934, at a lawfully called meeting of the Control Committee, offcially acting as such under the aforesaid Marketing Agreement and License, said Control Committee passed a resolution adopting a schedule of minimum prices for package bees, nuclei and queens, which schedule of minimum prices is hereto attached and designated as "Exhibit A—Minimum, Prices under the Marketing Agreement and License for Package Bees and Queens." You are further informed that the Secretary of Agriculture of the United States, on the first (1st) day of December, 1934, officially approved said schedule of minimum prcies to become effective immediately.

You are hereby notified that every shipper of package bees, nuclei and/or queens in the United States, whether a signer of said Marketing Agreement or not, is legally bound under said License to observe said schedule of minimum prices; and that a failure so to do will constitute a violation of a Federal Law known as the Agricultural Adjustment Act.

It is believed that a faithful observance of this schedule of prices, in the transaction of business, will result in great benefit to the package bee industry, as well as to each and every individual shipper in that industry. Your co-operation, therefore, in making this schedule of prices effective immediately will be greatly appreciated. Very truly yours,

J. M. ROBINSON,
Managing Director.

EXHIBIT A—MINIMUM PRICES FOR MARKETING AGREEMENT AND LICENSE FOR SHIPPERS OF PACKAGE BEES AND QUEENS (Approved December 1, 1934).

Section 1. Minimum Prices. Minimum prices for package bees, nuclei, and queens are hereby established by the Control Committee pursuant to Article III of the Marketing Agreement and pursuant to Article II of the License for Shippers of Package Bees and Queens produced in the United States; and such minimum prices, until changed, shall be as follows:

1. The price of queens shipped or delivered from November 1 to May 31 shall not be less than seventy-five (75) cents each, postpaid; and the price of queens shipped or delivered from June 1 to October 31 shall not be less than fifty (50) cents each, postpaid. The price of each purely mated queen shall not be less than double the price of each queen, postpaid.

2. The price of each package of bees with one queen, shipped or delivered from November 1 to May 31 shall not be less than the following prices:

(a) For two (2) pounds of bees net, express collect, $2.45 each; and for three (3) pounds of bees net, express collect, $3.15 each. For each additional pound of bees added to such 2-pound and 3-pound packages, not less than (70) cents additional.

3. The price of each package of bees with one queen, shipped or delivered from June 1 to October 31 shall not be less than the following prices:

(a) For two (2) pounds of bees net, express collect, $1.95 each; and for three (3) pounds of bees net, express collect, $2.55 each. For each additional pound of bees added to such 2-pound and 3-pound packages, not less than sixty (60) cents additional.

4. When packages of bees mentioned in the above sub-sections 2 and 3 are sold without queens, the price of such queenless packages shall not be less than the minimum prices specified in sub-sections 2 and 3 after deducting the minimum prices for queens specified in subsection 1 of this exhibit.

5. When packages of bees with queens are shipped by parcel post, the shipper shall charge the purchaser postage and ten (10) cents per package above the prices scheduled in the above sub-sections 2 and 3.

6. The prices of nuclei with one comb, two (2) pounds of bees net, and one queen shipped or delivered from November 1 to May 31, shall not be less than $2.85 each, express collect; and the prices of such nuclei containing three (3) pounds of bees net shall not be less than $3.55 each, express collect. The prices for each additional comb added to any such nucleus shall not be less than forty (40) cents additional to the prices specified in this sub-section for each 2-pound and each 3-pound nucleus; and the prices for each additional pound of bees in each such nucleus shall not be less than seventy (70) cents additional to the prices for such 2-pound and 3-pound nuclei specified in this sub-section.

7. The prices of nuclei with one comb, two (2) pounds of bees net, and one queen shipped or delivered from June 1 to October 31, shall not be less than $2.35 each, express collect; and the prices of such nuclei containing three (3) pounds of bees net, shall not be less than $2.95 each, express collect. The prices for each additional comb added to any such nucleus shall not be less than forty (40) cents additional to the prices specified in this sub-section for each 2-pound and each 3-pound nucleus; and the prices for each additional pound of bees in each such nucleus shall be not less than sixty (60) cents additional to the prices for such 2-pound and 3-pound nuclei specified in this subsection.

Talks to Beginners

M. J. DEYELL

Since undertaking the writing of "Talks to Beginners" a few months ago I have had the feeling that the Talks have been somewhat formal and stilted, and that perhaps they have not been getting across to you readers. I want to make these Talks informal, interesting and helpful. I want to use understandable language. If I fail to make myself understood please write me at once. I'll try to feel as though I were talking to each of you face to face. My object is to help all of you to succeed in beekeeping. I shall look forward with pleasure to our monthly visits.

I can well remember my first real introduction to the honey bees. It occurred one Sunday afternoon while my boy friend and I were fooling around in the home apiary of The A. I. Root Company. It was early in September, when the grapes were ripe. Each hive in the apiary had a grape vine along side to furnish some shade. Of course, we were not stealing grapes. We were simply taking them. Apparently the bees objected. One of them stung me below the eye and in less than half an hour my eye was swollen completely shut. I was a sight. I had a date with my girl friend that evening. I did not show up at the appointed time. She called up to know what had happened. When I explained my predicament she insisted that I call regardless of my distorted appearance. I did venture out after dark that evening.

"Bee Fever"

Every beekeeper becomes infected with what is known as "bee fever." Beginners are especially susceptible to it. The symptoms are easily diagnosed. The victims of this malady start talking incessantly about bees. They read every book that they can lay their hands on. They visit beekeepers and sit talking until the small hours of the morning. There really is no permanent cure for this disease but it can be relieved somewhat by getting some bees and working with them.

"Bee fever" did not attack me until I began working with bees, but when it did get me I had an awful case of it. I actually became so fascinated with bee work that I would scarcely take enough time out to eat. That is a fact. At present I do not permit bee work to interfere with my meals, but I still have the "bee fever," and I suppose I'll have it as long as I live.

Beginners Necessary

Occasionally I meet a veteran or commercial beekeeper who has little use for beginners. Some commercial men seem to think the beginners will take away some of their business or chisel in on their activities. In my opinion we need more intelligent, enthusiastic beginners. They talk honey and bees to their friends, also to the members of their churches and lodges and thus the community becomes more honey-minded. Enthusiastic beginners are a decided asset to the beekeeping industry.

Now, I realize I am talking to those who already have made a start in beekeeping, also to those who are planning to start this coming spring.

Beginners Who Have Bees

To you who have some bees may I suggest that you spend your spare time during these winter months reading good bee books and bee journals. If you have an opportunity to attend bee meetings by all means do so. You thus have the opportunity of becoming acquainted with other beekeepers. You will learn something from them.

If you are located in the northern United States or Canada your bees require no special attention during this month. I am assuming each colony is supplied with ample stores and protection against the cold weather. Once in a while an ice storm may clog the entrances of hives. As a rule, however, if the hives are facing east or south, the sun will melt the ice away from the entrances. It does no harm to make sure the hive entrances are open.

You beginners who have honey to sell can doubtless dispose of it locally without much effort. This journal contains many helpful hints on selling honey.

Beginners Starting Next Spring

To those of you who are looking forward to beginning with bees next spring I suggest that you send to a manufacturer of bee supplies for a bee supply catalog,

(Continued on page 60.)

From Foreign Lands

W. J. NOLAN

That beekeeper would be bold, indeed, who would claim to know all the habits of the empire which he attempts to control. Year by year this is proven by the uncovering of new bits of knowledge regarding familiar behavior by the honeybee. Thus, the scrupulous cleanliness of the bee about its own body and the hive has long been the subject of comment by beekeeping writers. Nevertheless, the way in which this cleanliness is attained has not been thoroughly understood. Walter Beecken recently published an interesting study on the subject in the Archiv für Bienenkunde, a journal which should be accessible to all bee students familiar with the German language.

Beecken points out that the honeybee, in contrast with many other insects, cleans its body with its legs and not with its mouth parts. Each pair of legs has its own modifications which are of use in the cleaning process. Thus, the front pair is equipped with an antenna cleaner on each metatarsus and with a spine on each tibia. The middle pair also has a spine at the end of each tibia, while the hind legs bear rows of spines. In addition all the legs bear hairs which aid in cleaning.

Beecken reports that, in cleaning itself, the bee begins in the head region and then works backwards. He states that, in general, foreign material removed by the front or by the middle pair of legs is passed on back to the next pair so that it is finally kicked off by the hind legs. For example, the head and its appendages are cleaned by the front legs. The dirt collected by any front leg is passed back to the middle leg of the corresponding side. These legs are then freed of their accumulation by drawing them through the two metatarsi of the hind legs which are pressed together. The removal of the web of the wax moth larva forms an exception to this procedure in that the web is kicked off directly by the middle legs. The hind legs kick off any dirt which is transferred to them from the middle legs.

Before leaving the hive the worker cleans its antennae, and then its eyes, and sometimes its front legs. The antennae are cleaned by drawing them through the antenna cleaner on the front legs. This process is gone through even though the antennae are apparently clean. This cleaning of the antennae is of practical biological significance since the antennae have such a great role in all the bee's activities. The compound eyes are cleaned by stretching the tarsi of the forelegs over the eyes on the corresponding side, and then the head is turned to scrape off the dirt. Occasionally the middle legs are used instead. A special cleaning of the simple eyes was not observed. The maxillae are cleaned by wrapping the front tarsi about them.

Beecken states that the back of the thorax and the union of the wing and thorax are not cleaned. The sides and underside of the thorax are cleaned by the tarsi of the middle legs. If the bee is on an upright wall, the middle and hind legs are used for holding on and the cleaning of the underside of the thorax is done by the front legs. Cleaning of the abdomen is accomplished by aid of the hind legs, although Beecken did not observe the dorsal side being cleaned. If the wings are dirtied by some sticky substance, they are shaken sharply and are then laid flat on the abdomen for the hind legs to finish the cleaning. Dust on the wings is given no special attention but appears to be merely blown off in flight.

The queen occasionally cleans herself, but not completely, such action being limited to cleaning antennae, eyes, and sides of thorax. The same is true of the drone, but, whereas the queen does not pass the dirt back to the third pair of legs, the drone does once in a while. Beecken does not hold that the queen is cleaned constantly by the workers. He points out that the queen scarcely ever comes in contact with dirt. The workers, however, remove the feces of the queen. The workers do not clean the drones. It is of interest that the worker cleans only one antenna at a time while the drone usually cleans both. Likewise, the worker restricts itself to one operation at a time in cleaning other parts while the drone may be engaged in cleaning two parts simultaneously, although this is not a fast rule.

Gleaned by Asking

THE EDITORS

Large Containers for Storing Honey

Question.—What is the best material for large containers in which to heat or store honey where there will be no danger of the honey reacting with the metal so as to become discolored?—William C. Rugg, Massachusetts.

Answer.—The best material for large containers or storage tanks to hold honey is galvanized sheet metal. It costs considerably less than steel coated with tin and so far as the chemical action of honey on tin or zinc is concerned the difference is only very slight, if any, but avoid lead coated metal. Years ago it was believed that honey should not be put into anything except tin, wood or glass. When the air is kept away from the honey stored in galvanized metal or metal coated with tin there is practically no chemical action. The honey stored in your extractor, if it is only a small quantity and exposed to the air, would turn dark whether in tin, glass or galvanized metal. Possibly the reaction might have been slightly more with the last named. Galvanized storage tanks are used almost universally by beekeepers everywhere in the country.

Proper Sized Food Chamber

Question.—I have four colonies packed in tarred paper cases filled with leaves, with the food chamber on three of them consisting of shallow supers, nine frames to a super, frames 4 ½ inches deep, and one with a deep super on it for a food chamber. Do you think this enough packing to insure good wintering and brood rearing in spring?—Leslie V. Hickman, Iowa.

Answer.—During ordinary springs, we believe that your food chambers will contain enough honey to tide the bees over the spring period provided there is considerable honey in the brood chamber in addition to that in the food chamber. Frequently, however, the weather is so unfavorable that the bees consume much more than they are able to gather during the spring and in some cases they consume all the honey in a deep super used as a food chamber. The super containing the 5⅜-inch frame would be better in most localities since it holds more honey. If you find that your shallow supers do not hold enough honey to carry your colonies through the spring, you can staple two of them together and use standard frames in them. They can then be used either as supers, food chambers, or brood chambers.

Wintering Bees in a Brooder House

Question.—Would it be all right to put my ten colonies in an old brooder house for winter?—John Sloan, Michigan.

Answer.—No. It would be better to leave the hives outside where they can have the benefit of the sun on bright days. The temperature in such a building would fluctuate practically the same as that outside, about the only advantage being protection from the wind. Furthermore, on warm days many bees would leave their hives in an attempt to make a cleansing flight and would not be able to get back on their hives. It would be much better to leave the bees where they are on their summer stands and pack them for the winter.

Proper Distance of Windbreaks from Hives

Question.—At what distance should the hives be located from the fence or windbreak? Some of mine are two feet from the fence. This is a solid board fence, four feet high, and while it is good protection from the wind, the hives are in the shade in the afternoon.—Walter H. Smith, Wisconsin.

Answer.—In the case of a solid board fence, the wind swirls to the ground at certain distances from the fence, depending upon the lay of surrounding land and buildings and the height of the fence. Beekeepers have noticed in such cases that a row of colonies at a certain distance from the fence winter poorly year after year, on account of the swirling of the wind, while hives nearer the fence or further away may winter well. This can be remedied to a certain extent by spacing the boards slightly apart so that a strong wind does not create a partial vacuum just beyond the fence. Theoretically, the hives should be close to the fence on the north side and far enough away on the west and east sides to permit the sun to shine on the hives during most of the day. A suitable windbreak, either of trees or a fence, is a distinct advantage in wintering bees.

Hubam Sweet Clover

Question.—I would like some information on Hubam sweet clover. About eight or ten years ago much was said about Hubam, but I notice the last few years nothing at all is being said through our bee journals about the plant. I would like to know why.—Guy Sumner, Colorado.

Answer.—Hubam clover is not as popular as it once was. When it first came out about ten years ago, it was believed that it would supplant the regular biennial

white sweet clover because it would mature in one season. It has been found since that the root system is not as extensive and therefore, does not enrich the soil to the extent the regular two-year growing white sweet clover does. Probably the best authority on sweet clover in general is Professor Willard of Ohio State University. Hubam is a splendid honey plant. It will yield as much honey in one year as the biennial does in the second year. It is a rapid grower but it does not reseed itself in most of the northern localities. It has to be planted very early and cultivated a good deal like corn. It is a wonderful plant to grow in connection with the regular biennial variety.

Coil for Honey Tank

Question.—Please give me information on making a coil for heating honey. I plan on connecting a honey pump to a supply tank, and a copper coil to the pump, and run this coil into a tank of hot water. How many feet of copper tubing would it require to heat the honey to 160 or even to 190°? At what speed should the pump run? Should the tubing be ½" or ¾" in diameter?—Leo Erickson, Minnesota.

Answer.—It is very difficult to give definite answers, for so much depends on different conditions. About all you can do is to cut and try. The amount of honey that a honey pump will deliver at a certain speed depends upon the thickness of the honey, the friction of the honey in the pipe on the outlet side, as for example the height to which you pump, or the number of feet of coils in the hot water. It also depends upon whether the honey flows to the pump by gravity or whether the pump has to lift it several inches. Preferably, the honey should flow to the pump by gravity. Another uncertainty is the amount of heat, whether you can keep the honey surrounding the honey coil at a certain given temperature. If the coil of cool honey keeps lowering the temperature of the water, that is another problem. Your plan is going to require a lot of fire. Assuming that the honey will be fed to the pump by gravity, that your honey is of average thickness and that a three-quarter pump is revolving at a speed of about 75 revolutions per minute, we would estimate that you should have 25 feet of coil to carry the honey through the hot water. It would be better to have more coil than you need so that you can control the temperature of the honey by controlling the temperature of the water. We suggest not less than 25 feet of pipe. We would recommend one inch pipe, or one size larger than the outlet to your pump. There is one objection to this plan, and that is, that if the flow of honey through the pipe stops, the little that sticks to the inside of the pipe is likely to be caramelized, that is, overheated. You can overcome this objection by having an arrangement whereby you can draw the hot water off the minute the flow of honey stops. Do not heat the honey above 160°.

Installing Package Bees

Question.—What time would be the best in my locality to get in package bees? I lost two swarms this winter so far. Could I get package bees and put them in on this honey with success? How much time should I allow for the bees to reach me after being shipped. Are the golden Italians better than the three-banded?—Frank B. Keller, Illinois.

Answer.—As the seasons average, we think you will do well to install package bees around April 15 or soon after. Some seasons it might do as well if they were installed about the first of May, especially if you depend chiefly upon sweet clover for your surplus honey, but as a rule, we think it will be better to have them a little earlier. The time required in transit from the shipping point depends upon the connection and the distance. You can get rather accurate information regarding this by consulting your local express agent. Most beekeepers prefer the ordinary three-banded leather-colored Italians. While some strains of golden Italians may be equally as good, as a rule beekeepers do not consider them quite as desirable for all purposes as the ordinary three-banded leather-colored Italians.

Beekeepers with Stomach Trouble

Question.—Does honey ever cause gas and sourness on one's stomach? If not, why are there so many beekeepers and honey users with these troubles?—T. A. Myers, Missouri.

Answer.—The accepted opinion among medical authorities is that honey does not cause gas or sourness in the stomach. This is because the honey does not require digestion, but is ready for assimilation immediately. The theory is that honey can not cause fermentation since it is absorbed so soon after being taken into the alimentary tract that it does not have time to ferment. Sugar, on the other hand, requires digestion and, therefore, can not be absorbed quickly. We are wondering if the people you mention as having such troubles do not use considerable sugar in addition to honey. We suspect the trouble is caused by something else and not by honey in the cases you mention. It would be well for those who are having such trouble to consult a good physician and discover the source of the trouble.

(Continued on page 63.)

That Valdosta Convention

The big convention talked about so much in the bee journals for months back was surely a great success. From the standpoint of attendance and the number of leading men that were present; from the standpoint of representation from the states North as well as South; from the standpoint of good will, harmony and enthusiasm, this meeting will easily outrank any other like event ever held in the history of beekeeping in this country.

The climate of Valdosta is ideal and the weather during the week was fine. If there had not been a severe cold spell, accompanied by snow and ice in the North when most beekeepers were starting to drive South for this convention, the attendance would have been much larger. When the Senior Editor left home there was a raging blizzard and it continued more or less until Atlanta was reached. As it was, there were between five and six hundred present all told, representing 30 states and three provinces of Canada. The number of states represented and likewise the number of leading men who were at Valdosta was greater than those at any previous time or place.

The program covering four different organizations, taking in the leading minds of the country went off like clock work, thanks to the careful planning of the secretaries and the presiding officers of these various organizations.

Perhaps the most outstanding feature of the convention was the prevailing good will and enthusiasm that was felt on every side. It was clearly apparent that the South held out a welcoming hand to the North. The South is noted for its hospitality, and Valdosta gave its guests a most royal good time.

No small credit for this is due to the untiring efforts on the part of Mr. Puett, the Secretary of the Southern Conference, and to Mr. Ashley of the Chamber of Commerce.

An interesting part of the convention was the hall in which exhibits of bees, queens, bee supplies, and honeys of different flavors and colors were on display. The South, and especially the states of Georgia and Florida, is noted for its wide variety of honeys from different sources. These honeys, together with those from other states, were pyramided attractively and in some instances the honey in glass was shown to very good advantage by means of electric lights cleverly hidden within the pyramids. The exhibit hall, conveniently located, was the center of attraction between sessions.

As already stated, the representation covered a wide area, from Quebec to California and from Manitoba to Florida. There was friendly rivalry between states, each state boosting its outstanding qualities as characteristics. For instance, a speaker from Georgia gave the impression that to get the most out of life, one must live in that wonderful state. Another speaker from Florida, in order not to be outdone, set forth the unusually desirable qualities of that sunshine state and climaxed his remarks by saying that those who wished to go to heaven must go by way of Florida.

The banquets and the negro melodies were especially enjoyed. It was a real treat to those of the North to hear one hundred negroes with their rich voices sing such songs as "Down Upon the Suwanee," and one of the soloists with a deep bass voice brought down the house with a roar of applause.

E. G. LeStourgeon was the toastmaster of the second event on Wednesday evening and he is a real "Guy" at that business.

After the toasts and the entertainment furnished by negro talent, the Senior Editor of this journal and his wife were treated to a real surprise. The thing had been brewing for months it seems. Near the close of the program, the toastmaster introduced Mr. Kenneth Hawkins, of the G. B. Lewis Company. In a neat little speech he presented to Mr. and Mrs. E. R. Root a beautiful silver service set which at a strategic moment was uncovered. Mr. Hawkins then went on to say that it was a token of love and respect from Mr. Root's many friends not only at the banquet but from all over the country. Mr. Root was so overcome, not to say flabbergasted, that he could hardly express himself, and in broken words tried to the tell the "postmaster" and the guests how deeply he and his wife appreciated the courtesy.

In all sincerity E. R. feels that it was a real compliment to Gleanings as the gift came from competitors as well as old friends. Gleanings says, "Thank you, friends, from all over the country."

BUY AND SELL HERE

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

The reliability of honey sellers is not guaranteed, although strict references are required.

CHOICE white clover honey in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

WHITE clover honey, comb and extracted. Lewis Klaty, Carsonville, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

CHOICE clover in new 60's, case or carload. Wesley Johnston, Port Hope, Mich.

BEST comb and extracted clover honey. Porterholm Apiaries, Adrian, Michigan.

550 CASES clover-basswood comb honey. Charles Guhl, Napoleon, Ohio, Route 7.

SEND for honey prices. Discount for quantity orders. H. G. Quirin, Bellevue, Ohio.

NEW crop clover extracted honey in new sixties. D. R. Townsend, Northstar, Mich.

WRITE me for prices and samples of honey. I can please you. Thos. D. Sherfick, Shoals, Ind.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

FANCY clover honey and all other grades, in 60s; one can or a hundred. Finger Lakes Apiaries, Homer, N. Y.

MICHIGAN finest white clover honey, in 60-lb. cans, case or carload. Arthur Thayer & Sons, Freeland, Mich.

FOR SALE—New crop clover honey in 5-lb. pails and 60-lb. cans, case or carload. H. B. Gable, Romulus, N. Y.

1934 CROP clover honey. Comb in eight-case carriers. Fancy, $3.50; No. 1, $3.00 per case. Walter A. Wood, Naples, N. Y.

FANCY white comb, $3.25 case; No. 1 white, $2.75; No. 2 white, or No. 1 amber, $2.25; white clover extracted, 7c. C. B. Howard, Geneva, N. Y.

EXTRACTED white clover honey in 5-lb. pails and 60-lb. cans. 1-lb. sample, 20c; new crop; also comb honey. F. W. Summerfield, Grand Rapids, Ohio.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

FOR SALE—Clover extracted. F. W. Lesser, Fayetteville, N. Y.

MICHIGAN white extracted in 60's. M. H. Hunt & Son, Lansing, Mich.

FOR SALE—Extracted honey in 60-lb. cans. Henry Hettel, Marine, Ill.

CLOVER extracted, new sixties, extra white, 7c. I. R. VanDevier, Medina, Ohio.

FOR SALE—85 cases comb honey. Prices on request. R. J. Williams, Attica, Ohio.

MICHIGAN extracted clover honey in sixties. Leland Farnsworth, Davison, Mich.

CHOICE clover honey in 60's. Case, $9.00. Sample, 10c. Abel Totems, Owosso, Mich.

WHITE clover honey in 60's. Money-back guarantee. Leslie A. Davis, Grover Hill, Ohio.

WHITE clover, light amber, or amber honey, in 5, 10, and 60-lb. tins. Harry T. Gable, Romulus, N. Y.

FOR SALE—Extracted in new 60's. Light, 8c; light amber, 7c. Merrill Bee & Honey Co., Muncy, Pa.

FINEST white clover extracted honey, in new sixties, case or carload. L. S. Griggs, 711 Avon St., Flint, Mich.

CLOVER-BASSWOOD blend honey, well ripened, in new 60-lb. cans. Sample on request. B. B. Coggshall, Groton, N. Y.

FINEST QUALITY white clover honey, 7c lb.; amber clover-goldenrod, 6c. All new sixties. E. G. Kyte, Westport, Pa.

EXTRA white clover-basswood honey in new 60-lb. cans, 7c per lb.; 4 cans or over, 6¾c. A. A. French & Son, Theresa, N. Y.

FIFTEEN tons, finest quality, northern New York clover-basswood honey. Leroy C. Keet, 1003 Leray Street, Watertown, N. Y.

40,000 LBS. extra white clover honey, in new 60's, at 6½c per lb. for the whole lot; or 7½c in small lots. C. J. Freeman, Mesick, Mich.

FINEST white clover honey in new 60's, $9 per case, 120 lbs. Good amber honey, $7.50 per case. Sample, 15c. Noah Bordner, Holgate, Ohio.

7000 POUNDS clover-basswood honey in new cans and cases, 7½c; 1500 pounds amber fall bakers' grade, 6c. Valley View Apiaries, Savanna, Ill.

CLOVER or buckwheat honey, combs and 60 lbs., 5-lb. can, 32-oz., 16-oz., 8-oz., 4-oz. bottles, from producers. J. H. Scarff & Son, Box 536, Syracuse, N. Y.

NEW crop clover honey, best quality, new 60-lb. tins, in lots of 1 to 5, at 7½c per lb.; larger quantities, 7c per lb. It will please you. W. D. Achord, Findlay, Ohio.

HOWDY'S HONEY—White, clover extracted in new sixties. Carlot or less. Also some amber. Howard Potter, Ithaca, Michigan. (Personal, 1200 Mass. Ave., Cambridge, Mass.)

FINEST Michigan clover honey. New cans and cases. Did you notice that we fill our cans FULL, and that they are overweight? E. D. Townsend & Sons, Northstar, Michigan.

COMB honey, prices lower. N. B. Querin & Son, Bellevue, Oh.o.

WHITE clover, 60's, 7c and 7½c lb. C. J. Baldridge, Kendaia, N. Y.

VERY fine quality clover honey. Riverside Apiaries, Russell, Illinois.

FOR SALE—75,000 lbs. extra fine clover honey. Edw. Klein, Gurnee, Ill.

BASSWOOD honey, 1934 crop, packed in new cans. Gelser Bros., Dalton, N. Y.

FINE clover honey in sixties, 7½c per lb. Sample, 15c. Jos. H. Hoehn, Ottoville, Ohio.

AMBER comb, No. 1, $2.25; No. 2, $1.75; also basswood extracted in 5-lb. pails. Noel J. Loucks, Springboro, Pa.

FANCY white comb, $3.25 case; No. 1, $2.75. Water white extracted, $9.00 case. Howard Grimble, Holcomb, N. Y.

RASPBERRY-MILKWEED-CLOVER blend. Michigan's most delicious table stock, produced only in selected areas. Packed, new cans and cases, 120 lbs. net; 1 case, $10.00; 5 or more, $9.00. Ira D. Bartlett, East Jordan, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms, except when the buyer has thoroughly established his credit with the sellers.

WANTED—White extracted honey in 60-lb. cans. Roscoe F. Wixson, Dundee, New York.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Ind.

WANTED—Dark grades of honey, also 200 colonies of bees. Riverside Apiaries, Russell, Illinois.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Carlots or less of white clover extracted honey. Mail price and sample to Clover Blossom Honey Co., Columbus, Ohio.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth St., Los Angeles, California.

FOR SALE

FOR SALE OR TRADE—For extracted honey, old-fashioned round straw beehives. G. Korn, Berrien Springs, Mich.

ELECTRICAL comb honey cutting knives, uncapping knives, $10.00 each; with thermostat, $14.00. Paul Krebs, 8000 Fulton Ave., Detroit, Michigan.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE—300 beeway comb-honey supers, division boards and holders for 275 supers. Will accept cash, exchange on packages, bees, or extracted clover honey. Absolutely free from disease. The Stoller Apiaries, Latty, Ohio.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

SAVE money with a Rietsche foundation press. John Stegedirk, Hubbard, Iowa.

BARNES sawing machine with 4 saws and dado head. In fine condition. Price, $19.00. Noah Bordner, Holgate, Ohio.

100 DRAWN combs, Hoffman, $25.00; 100 wired foundation, $15.00; full colonies bees, $5.00; guaranteed no disease. Gleanings, 15 volumes, $10.00; Dixie Beekeeper, complete file, $8.00; Beekeepers' Item, 9 volumes, $4.00; Ford roadster, 1926, $30.00; double-barreled shotgun, $12.00; cider mill, $10.00; bee books and other items. Will trade for honey or wax. Callaway Apiaries, Norwood, Va.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

60-ODD colonies, best offer honey or money. Guaranteed no disease. Carrington Callaway, Norwood, Va.

WINTERED Italian queens, 75c each, any number. Order now. I mail queens every month. D. W. Howell, Shellman, Georgia.

FOR SALE—500 colonies bees and equipment in A-1 condition, guaranteed free from disease. W. M. Peacock, Mapleton, Ia.

MOUNTAIN GRAY CAUCASIAN bees and queens. Get in touch with us for your 1935 needs. Bolling Bee Co., Bolling, Ala.

BEST Caucasian queens and package bees at new Code prices. Booking orders now for spring delivery. P. B. Skinner Bee Co., Greenville, Ala.

FOR 1935, Caucasian package bees, nuclei and queens. Can book your order without deposit for April, 1935, delivery at code prices. Lewis & Tillery Bee Co., Greenville, Alabama.

CHOICE Italian queens. We specialize on Italian queens and will be pleased to quote you for next season. Our 25th year as commercial queen-breeder. White Pine Bee Farms, Rockton, Pa.

THREE-BANDED Italian bees and queens that are real honey gatherers and gentle to work with, for 1935, at Code prices. Satisfaction guaranteed or your money returned. Alamance Bee Company, George Elmo Curtis, Mgr., Graham, North Carolina.

HELP WANTED

WANTED—Helper understanding bee disease. Description, qualifications, references, when available, in first letter. Sandwich Islands Honey Company, Limited, Honolulu, Hawaii.

MISCELLANEOUS

GENERAL job printing. A. Matson, 21513 Donaldson, Dearborn, Michigan.

WANTED—500 colonies bees. Also 3 men for 1935 season. Edw. Klein, Gurnee, Ill.

WANTED—Bees and equipment, or work bees on shares. Paul Madison, Winnebago, Nebraska.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

10 bound volumes of Gleanings for sale, from 1924 to 1933, $1.00 per volume. Parcel post paid to third zone. L. H. Lindemuth, Lehmaster, Pa.

WANTED—To exchange package bees, for 500 sheets of Dadant's wired brood foundation, 500 brood frames. D. P. Green, 400 S. Blvd., Deland, Fla.

WANTED—Bees and supplies or going apiary in exchange for $1800.00 equity in modern 6-room cottage in Chicago. Box 35, Gleanings in Bee Culture, Medina, Ohio.

3000 Packages of Bees

—and—

Queens of Quality

—For 1935—

BEST THREE-BANDED ITALIAN STOCK.

J. F. McVay, Jackson, Alabama

DO YOU WANT BEES
Live Delivery, On Time?

Our 1934 lossage was 12 packages out of several thousand shipped. **MERRILL'S QUALITY BEES** are just as good as the best. Orders booked without deposit at Code prices.

MERRILL BEE COMPANY
BUCATUNNA, MISSISSIPPI.
Mississippi's Oldest Shippers.

ITALIAN BEES and QUEENS

(Packages and Nuclei with Select Queens)

2-pound package	$2.45
2-frame nucleus and 1 lb. bees	2.55
1-frame nucleus and 2 lbs. bees	2.85
3-pound package	3.15
Each additional pound of bees	.70
Each additional frame of brood	.40
Select untested queens	.75

Our guarantee: Prompt service, quality, safe arrival. 10% deposit books order in advance. Circular, Price List Free.

CLOVERLAND APIARIES, HAMBURG, LA.

Package Bees

Overweight Packages.
Light Shipping Cages.
Pure Mated Queens.
No Disease, Safe Arrival.
Prompt Shipment and Satisfaction
Is what you should expect in 1935. We guarantee this, and will be better prepared to make good our guarantee than ever before. Booking orders now without deposit. Reserve your shipping date early. Don't be disappointed.

The Crowville Apiaries, Winnsboro, Rt. 1, La.
J. J. Scott, Prop.

With Our 1935
Package Bees

You will Receive Young Italian Queens, Young Bees,
Prompt Shipment

••

Bees in good condition upon arrival, Courteous and honest dealings.

••

Write us your wants. Your order will be appreciated, whether large or small.

••

Citronelle Bee Co., Inc.
CITRONELLE, ALABAMA

HONEY MARKETS

(Cotinued from page 5.)

amber, small pails, 8c per lb. Few sales No. 1 comb, $3.75 per case.

East Central and North Central States: Michigan, Wisconsin and Minnesota—Moisture conditions are better than at this time last year, as all three states had far more than normal precipitation during November, and snow has fallen since the first of the month, so that practically the entire territory is now covered with snow, mostly six inches deep or more. Northern and western Minnesota, however, received comparatively little moisture. The weather has been very cold and beekeepers are finishing placing their bees in the cellar. Demand for honey is slackening somewhat, though it continues good, partly as a result of publicity received from the National Honey Week. Sales reported, white extracted, ton lots, 6½-8c per lb.; small pails, 9c; few higher; comb honey, No. 1, 3.50-3.75 per case, few higher; fancy up to $4.75; No. 1 light amber comb, $3.25 per case. Ohio, Indiana and Illinois—Cold, windy weather has prevailed recently and snow covers the entire area. In upper Illinois early September rains prevented any fall flow except in those apiaries in close proximity to buckwheat fields. As a result some feeding has been necessary. So much rain fell in November that brooks and rivers were filled for the first time in years, but there is still a great deficiency of moisture in the ground in Ohio and parts of Indiana. Inquiry for extracted honey has been good, and sales have been fairly numerous, but comb honey is moving slowly. Sales reported, large lots white extracted, 6.4-7c per lb.; smaller lots up to 9c, and few higher; amber 60s, 8c per lb.; large lot fall honey, 7c per lb. No. 1 white comb has moved at $3.00-3.75 per case; No. 8, $2.50 per case. Light yellow beeswax, 20c per lb.

Northeastern States—New York: With sub-zero temperatures in upper New York and zero in the central part of the state, demand for honey is only fair. Though stocks of dark honey are light, considerable white to water white honey is still available. The snow cover is light and the hard freezing of the ground is unfavorable for honey plants. More bees have been packed outdoors this fall than usual, yet many beekeepers are leaving them unpacked. Colonies are generally in very good shape. Very little comb honey remains unsold. White to water white extracted has sold, ton lots, 6½-7½c; 60s, 7½-9c; small pails, 10-11c per lb.; light amber clover, ton lots, 6½c; buckwheat ton lots, 5-6c; 60s, 6c per lb. Few sales No. 1 white comb, $4.00 per case. Connecticut: Cold weather came late and as bees were able to fly later than usual they are in excellent condition. Sales

(Continued on page 61.)

TOO LATE FOR CLASSIFICATION

CLOVER comb, also extracted, in 60-lb. cans. C. Holm, Genoa, Ill.

HONEY FOR SALE. Write for price and sample. Leo. J. Allemeier, Delphos, Ohio.

WANTED—Power extractor, good condition; Lewis-Merkle preferred. Harold Long, Millville, Pa.

350 COLONIES bees, with best and complete equipment, guaranteed free from disease, for honey and package business, at a sacrifice price. L. L. Ferebee, Pineland, S. C.

FOR SALE—8 and 10 frame comb supers in excellent shape. Would change to extracting supers easily. 20c each, or will barter. Correspondence solicited. A. H. Dunn, Ft. Collins, Colorado.

Package Bees & Queens

—FOR 1935—

By the pound, ton, or car.

The Victor Apiaries, Kyle, Texas

TALKS TO BEGINNERS

(Continued from page 52.)

in which you will find hives, supers, and other appliances described, with prices, also bee books.

You might write to the Bee Culture Division of the Bureau of Entomology, Washington, D. C., for their bulletins on beekeeping.

In next month's Talks to Beginners we will consider the proper method of beginning beekeeping, also the proper time to purchase bees and equipment.

HIGH GRADE ITALIAN QUEENS

Write for our free book, "About Bees," which is a treatise on Beekeeping for the beginner as well as the commercial Beekeeper.

JAY SMITH

ROUTE FIVE, VINCENNES, INDIANA.

"OUR HOMES" By A. I. ROOT

We have on hand bound volumes of Gleanings in Bee Culture from 1906 up to 1915, which we are offering as long as our stock lasts. These volumes contain the personal writings of A. I. Root. Send your order now, naming first, second and third choice as to years.

GLEANINGS IN BEE CULTURE — Bound Copies for Years Listed Above — 50 CENTS POSTPAID

New Schedule of Minimum Prices Adopted by Control Committee at Valdosta Meeting. Schedule Not to Become Effective, However, Until Approved by Secretary of Agriculture.

On account of numerous requests, made both by the shippers and by the buyers of package bees, the Control Committee of the Marketing Agreement for Package Bees and Queens met in Valdosta, Georgia, December 18, to reconsider the recently approved price schedule for package bees and queens. After a thorough consideration of the minimum price schedule approved by the Secretary of Agriculture on December 1, 1934, the Control Committee unanimously adopted an amendment to the December 1 schedule, which amendment reduced the price of nuclei to the same level of the price of packages, and which provided further for a dealer or wholesale discount of 15 per cent from the December 1 schedule as amended.

It was the unanimous opinion of the Control Committee that the proposed new schedule of minimum prices is such as not to discriminate against the small shipper and is at such level as will encourage the maximum use of package bees and queens.

The amended schedule of prices will be immediately submitted by the Control Committee to the Secretary of Agriculture for his approval, and if approved will become the effective prices at the time of the approval by the Secretary. However, if the new proposed schedule of minimum prices is not approved by the Secretary, the December 1 price schedule will automatically remain in effect. Furthermore, until the proposed new schedule of prices is adopted, the December 1 schedule remains effective.

• • •

Good Meeting at Toronto

The Ontario Beekeepers' Association's yearly meeting at Toronto, Ontario, November 28-30, was one of the best ever held. The unusual number in attendance necessitated securing a larger room for the meeting. The supersedure of queens in packages, wintering bees, processing honey, net weight for honey containers and control of disease were some of the topics discussed. The officers of the association, together with Dr. E. J. Dyce, Provincial Apiarist and Secretary and Treasurer of the Association, are to be congratulated on the fine set-up of the meeting.—M. J. Deyell, Medina, Ohio.

HONEY MARKETS

(Continued from page 60.)

are reported fairly good. The Connecticut Beekeepers' Association has put out a label for use by beekeepers of the state in the hope of improving the market for local honey.

Eastern Ontario.—Snowfall began late this year, but the ground is now well covered. Bees entered winter quarters in excellent condition, with very little feeding of sugar required. Surplus buckwheat honey is very scarce. Sales reported: White extracted, ton lots, 8c per lb.; No. 2 light comb, $4.00 per case. Beeswax, light yellow, 25c per lb.; dark, 23c per lb. Exports to Great Britain are reported unusually heavy.

Summary.—Temperature contrasts have been very wide during this period. During the first week temperatures were among the highest on record in the eastern half of the country but abnormally low in the central and south central states. Recent temperatures have been low, however, almost everywhere except through the eastern Intermountain area and on the Pacific coast, and with freezing weather extending to south Florida. Snow cover is general over the upper half of the country west of the Plains states and in scattered portions of the mountain area. Already the amount of snowfall in Idaho, northern Utah and western Oregon will assure irrigation water. In the white clover area the substantial snowfall is proving especially helpful to clover plants in the north central states, where it was generally preceded by heavy rains in November. The condition of the colonies continues satisfactory, with stores generally ample. Demand for honey is slackening somewhat, as is natural at this season of the year, but stocks are now so light that there appears to be an upward trend to the market in spite of the lessened demand. Carlots of honey are scarce and are generally being held for higher prices. Comb honey is rapidly cleaning up. Demand for export from California is principally confined to small lots of comb honey.

RED STICK
APIARIES & CO.

• • •

For Package Bees and Queens. We are booked to capacity for the early season, with orders anticipated from past year's customers and friends.

But this season will find RED STICK APIARIES & CO. fully equipped for the manufacturing of beekeeping equipments. Our Tops, Hive-bodies, and Bottoms will be manufactured exclusively of cypress lumber, "The Wood Eternal."

Let us quote you our attractive prices for your next season's needs. Package bees and queen cages will be available for package shippers.

Nothing shall be spared in the nature of courtesy, prompt service, and fairness in business relations to establish an enduring friendship with every patron.

LARGE APIARIES
MINIMUM CODE PRICES
RESPONSIBILITY

• • •

Red Stick Apiaries & Co.

Postoffice: MONTEGUT, LA.
Telegraph Office: Houma, La.

Package Bees and Queens for 1935

Larger Output and Better Service

We never stopped and have enlarged our business to handle 25% to 50% more packages of bees and queens the coming season than last. We might add that we are very much encouraged with general prospects of a good season ahead and feel that all available bees will be taken. Very likely the demand for package bees will exceed the supply, due to higher prices for honey and unfavorable conditions in some sections which held increase down. We urge buyers to play safe, get in on the ground floor and help us to help you by placing your order now for delivery in spring when wanted. Safe arrival and satisfaction guaranteed. We are booking orders now at 1934 spring prices and if any change is made the difference can be adjusted later.

We also carry a complete stock of **LEWIS BEEWARE AND DADANT'S FOUNDATION** and can furnish at catalog prices.

YORK BEE COMPANY, JESUP, GEORGIA

(The Home of Quality Products)

We are booking orders now without deposit. Prices announced later.

HIVES
FRAMES

"Quality for Quality"

We Meet Any Price

Root QUALITY Bee Supplies

WRITE TO
THE A. I. ROOT COMPANY
MEDINA, OHIO

GLEANED BY ASKING

(Continued from page 55.)

Hive Entrances During Winter

Question.—Will you kindly inform me how to care for my bees during the winter? I was told to put a screen over the entrance all winter so they could not get out during the winter. Others have different opinions on this. I am an amateur.—Thomas Eigenbrod, Ohio.

Answer.—You should not place a screen over the entrance of your hive during the winter months. This applies to bees wintered in a bee cellar, or out of doors. If a screen is placed over the entrance, the bees will try to get out of the hive and will become uneasy and may eventually die. The entrance to the hive should be left open during the winter months, but it should be reduced down to about 3"x⅜" to exclude mice.

Why Bees Perish in Greenhouses

Question.—Why is it that practically three-fourths of bees perish in greenhouses? Is there anything that can be done to prevent this?—Jacob J. Please, Illinois.

Answer.—Bees confined in greenhouses naturally try to get out in the open and thus wear themselves out flying against the glass. Some greenhouse men place each hive of bees in a hole in the wall of the building, with one entrance facing out of doors and the other entrance facing inside the greenhouse. This means that the bees have a chance to fly in the greenhouse or out of doors. When nectar is plentiful out of doors the bees naturally use the outdoor entrance more than they do the entrance into the greenhouse. This method would not insure such a large force of bees for the greenhouse pollination. However, it would give the bees in the hive a chance to recuperate by flying out of doors naturally. Bees confined in a greenhouse may obtain sufficient pollen for brood rearing. However, they may not obtain enough nectar and consequently feeding of sugar syrup may have to be resorted to. As a rule, it is necessary to put fresh bees in greenhouses periodically to insure efficient pollination.

Happy New Year

PLAN EARLY. LET US BOOK YOUR ORDERS PENDING SETTLING OF THE 1935 CODE PRICES.

GARON BEE COMPANY
DONALDSONVILLE, LA.

The Years Behind

Challenge our best efforts in the years ahead. Are you ready to meet the future? Progressive beekeepers everywhere are making plans for expansion. Recent developments warrant forward movement again for the first time in several years.

Always ambitious and energetic, we have anticipated an about-face, and are ready to consider any demands made upon us. "Hope springs eternal in the human heart," and if ever the future seemed to hold forth promise of better things, it is NOW. A realization of your hope can best be assured by using **JENSEN'S PACKAGE BEES AND QUEENS in 1935.** When you order from us, you get our own stock of Pure Three-banded Italians that have proven in comparative tests with other strains under identical conditions, to be much superior.

Our fifteen years' of selling direct to customers have brought their rewards. We have felt a close personal contact and interest that has been a source of genuine satisfaction to them, as evidenced by the many friendly letters we get each year.

We are going ahead with plans to make this our biggest and best year. If you have never tried our stock you may have a pleasant surprise in store. Good queens don't just happen to be good, consistently. Many little differences make a big difference.

Our prices will be as low as allowed by the Marketing Agreement under authority of the Agricultural Adjustment Act.

"May every blessing be yours in the New Year."

Jensen's Apiaries, Crawford, Miss.

(Winter Address, Macon, Miss.)

Thagard's New Deal

—ON—

Package Bees

Easy Terms

Each year we strive to breed a strain that is gentler, and better honey gatherers, since these are the two main items the honey producer is interested in. Color alone will not produce a honey crop.

LIGHT OR DARK MASTER BRED ITALIANS

We offer our customers their choice of color, both strains stock comes direct from Italy.

EASY TERMS

Enclose you will find 20% deposit on..... packages of bees or queens. I will remit 50% just before shipment is made, and balance after I have sold my honey crop.

Name .....

Address .....

PRICES PACKAGE BEES with QUEEN

2-lb. package, any number	$2.45
3-lb. package, any number	3.15
Untested queen	75c each

THE V. R. THAGARD CO.
GREENVILLE ALABAMA

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Gleanings
in Bee Culture

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Medina, Ohio

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